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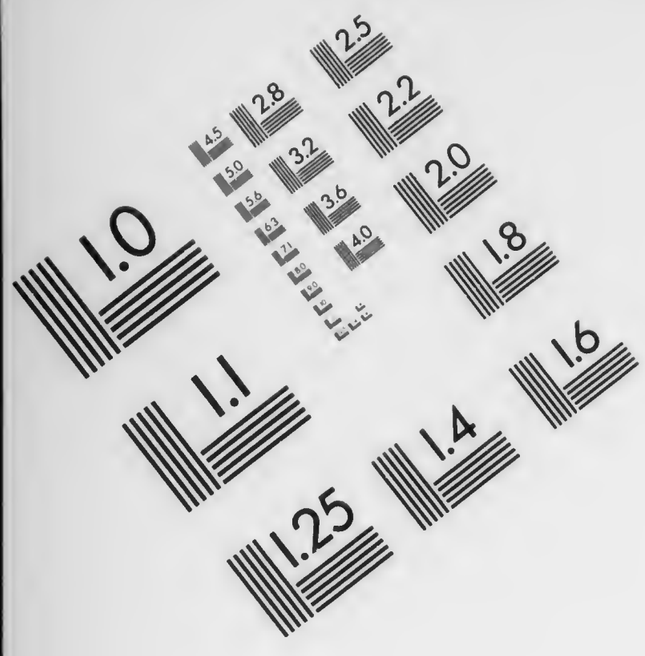


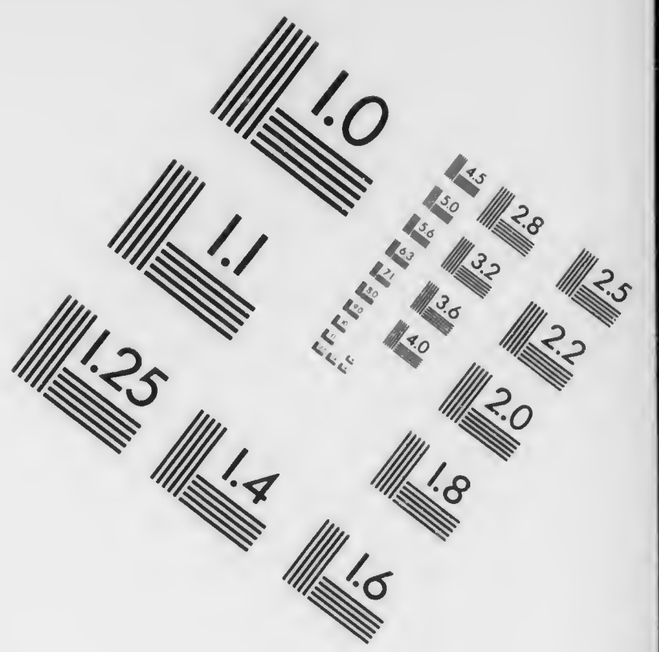


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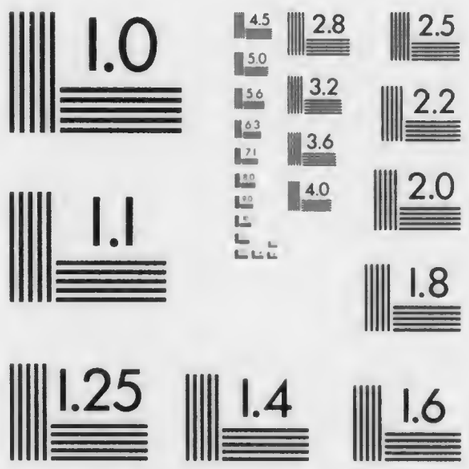


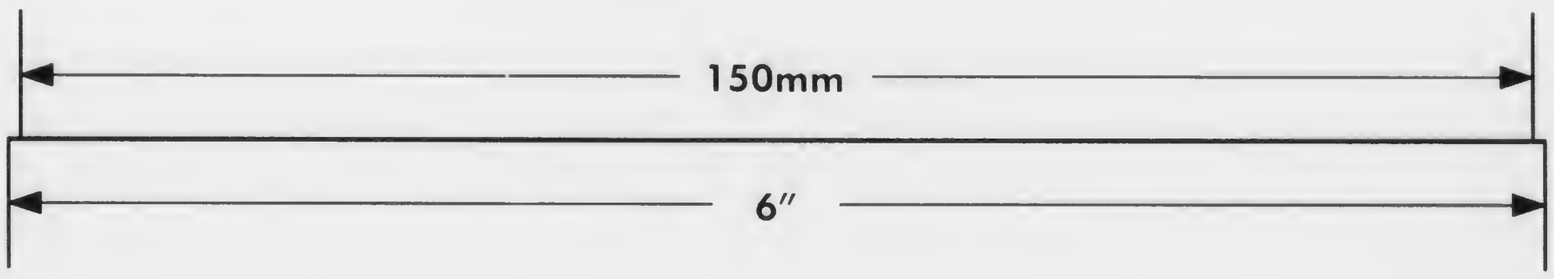


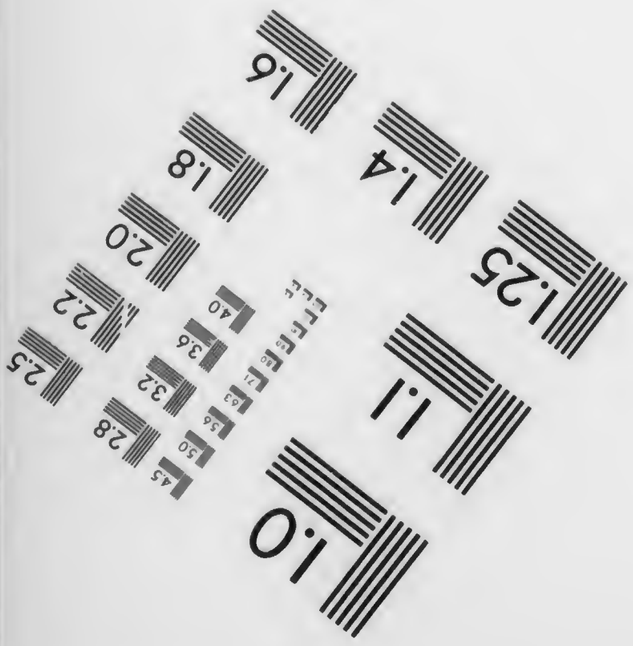


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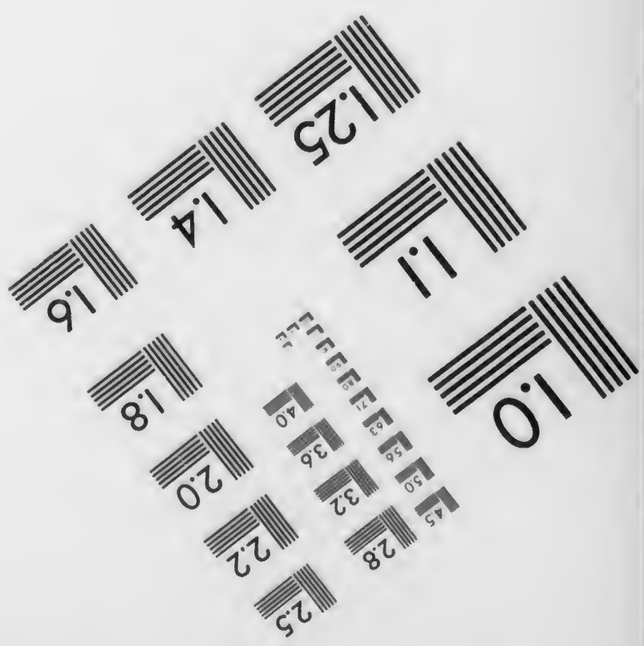

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**Published by Everybodys Poultry Magazine Publishing Co., Inc., Hanover, Pa.**

# An Explanation

**This is a specimen issue of the National Poultry Digest published with the idea of determining whether or not there is sufficient interest in our billion dollar poultry industry to justify its publication each month. This specimen copy is being sent to you and about 2,000 other folks who represent a typical cross-section of the audience to whom we would direct the appeal of this publication.**

## *Purpose*

**To select the cream of the current poultry articles, talks given before poultry gatherings, reports of poultry research, new poultry bulletins, poultry management surveys, late poultry statistics, and similar material, and condense it into concise form for easy reading. There may be occasions when the sales literature of commercial firms may contain information of sufficient general interest to reproduce in a publication of this kind.**

## *The Audience*

**While there are more than five and a half million poultry raisers in the United States, the appeal would be directed to those folks who are largely responsible for the progress of the poultry industry. They would include hatcherymen, breeders, poultry scientists, teachers of poultry husbandry, regulatory officials in the poultry field, representatives of commercial organizations serving poultrymen, advertising men, members of cooperative poultry and egg marketing associations, members of poultry organizations, students, and anyone who has a desire to keep up with the progress in ideas and practices in the poultry field.**

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*(Continued on Inside Back Cover)*

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Specimen Number — Fall, 1938

*A Review of the Farm Credit Administration's Study of . . .*

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By John J. Scanlan
Farm Credit Administration

*Condensed from a Talk*

THERE are at present 22 cooperative egg and poultry auction associations operating in the 7 Northeastern States and Ohio. Of these, 20 sell eggs and 16 sell poultry at auction. Three additional associations organized to sell at auction have ceased selling by the auction method chiefly because of the lack of competing buyers.

At the end of 1937, the 22 associations had a total active membership of 13,068, or 63.9 per cent of the 20,464 producers who were then or who had at some time been members of the auctions.

### Sales Over 10 Million Dollars

The auctions sold 991,414 cases of eggs and 172,314 crates of poultry having a combined gross sales value of $10,061,578 during the calendar year 1937. Sales of supplies to members are estimated at about $125,000.

The legal and organization set-up and the methods and policies of operation of the auction associations are quite similar, having in almost all instances been patterned from the Flemington association. Different production and marketing conditions have made some changes advisable and inevitable.

As a result of the findings of the study, seven important phases are deserving of attention.

(1) Records and reports of the associations are generally good. Greatest lack of information has to do with the members and the buyers. Audit reports were found lacking in statistical information for purposes of inter-association comparison.

(2) There appears to be an increas-

Talk presented at 1938 Business Management Conference of Northeastern Egg and Poultry Cooperatives, Ithaca, N. Y., June 23-24, 1938

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Talk presented at 1938 Business Management Conference of Northeastern Egg and Poultry Cooperatives, Ithaca, N. Y., June 23-24, 1938

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ing need for systematic membership educational work. Two methods especially suggested are the use of interesting and informative and regular news letters or leaflets, and more personal contact with the producers.

(3) Most of the associations at some time during their existence have taken substantial losses by selling on open account or by accepting post-dated checks. The increasing volume of products sold to large buyers at some auctions may make the extension of credit necessary and advisable but should be allowed only with the full knowledge and consent of the board of directors. None of the auctions has sufficient operating capital to take credit losses without dire consequences.

### Operating Cost 4.13 Per Cent

(4) The average cost of operating the 22 associations in 1937 was 4.13 per cent of the gross value of products sold with a range of from 2.4 to 7.4 per cent. The average cost per unit (a case of eggs or a crate of poultry) was 37.6 cents with a range of from 25.3 to 51.1 cents. Largest single item of cost was salaries and wages amounting to an average of 63.6 per cent of total costs. Total costs per unit could be reduced by an increase in volume or by a decrease in certain cost items such as auctioneer's salary, printing and stationery, auditing, and miscellaneous losses. Costs likely to increase are those incident to the acquisition of plant facilities, membership and field work, travel, advertising, and general supplies.

(5) One of the chief problems of the auctions is their capital structure. Analysis of the relation of operating capital to weekly sales shows that there was an average of 65 cents in operating capital for each dollar of sales with a range of from 7½ cents to $1.32. During peak periods when volumes are greatest, many of the auctions are actually overdrawn at their banks. Suggested method of increasing the auction's cash operating capital is by borrowing from the members on the so-called revolving fund basis. One association has already adopted this plan.

### Uniform Grading Needed

(6) Of the 22 associations selling eggs at auction, 17 use State grade, 3 their own grade, and 2 use U. S. grades. Early reports to the effect that the auctions were exerting a marked effect on egg quality improvement is not borne out at all associations by the study. Out of 14 auctions selling eggs for four years or more, 7 show decreases in the percentage falling into the top grade, 4 show about the same percentage, and only three show definite increases. That a more uniform system of grading and interpretation is needed is indicated in the wide range in the percentage of eggs falling in the top grade between auctions using the same grade standards within a State.

(7) It seems essential that the auctions as a group give serious consideration toward creating a more definite and direct overhead operating organization to serve as a service and coordinating agency. For 22 auction associations operating similarly and with common problems there is a need for an agency which will be in close and direct contact with them constantly and which will serve their interests actively and continually for their mutual benefits.

# Unusual Feedstuffs for Poultry

By H. J. Almquist

*Condensed from Nulaid News*

THERE is a frequent temptation to employ in mashes for poultry some of the more unusual and cheap feedstuffs, assuming that, since they may seem to have some value for other forms of livestock, they may be used to advantage, in poultry feeds. It should be remembered, however, that the chicken is a fast-growing and high-producing animal which requires a concentrated, rapidly-digestible diet. The chicken lacks, for example, the commodious, leisurely and efficient digestive machinery of the cow, and what it cannot easily assimilate it excretes largely unchanged. For this and other reasons, feedstuffs for poultry cannot be safely used except in accordance with their worth as demonstrated by actual tests with poultry.

One of the quickest ways to secure a basis for judging the value of a feedstuff for poultry is to place it in a well-balanced chick rearing mash in substitution for part of the grain component and determine by means of chick growth and efficiency of gain whether the feedstuff can replace the grains with equivalent results. If it cannot do so, it deserves little further consideration as a source of the major nutrients and, unless it has some unique value not obtainable in other feedstuffs, no further testing need be done.

Tests in this manner have been conducted in the case of certain products that have been advocated for poultry feeding.

Orange peel and pulp meal was eaten readily by chicks at levels up to 20 per cent of the ration. Mortality during the test was negligible. The meal, however, acted like an inert ingredient inasmuch as increasing levels of orange peel and pulp meal caused a corresponding and appreciable decrease in rate of gain and in gain per unit of feed consumed. Orange meal, therefore, is not recommended for poultry rations.

A product known as chocolate meal was found to depress rate of gain very decidedly, in fact, to cause chicks to lose weight at the higher levels. It was not eaten readily and appeared toxic, causing considerable mortality. Obviously, chocolate meal should not be employed in poultry feeding.

Babassu meal used in replacement of grains up to 10 per cent of the ration gave satisfactory results.

Another unusual product tested was cull pink beans. These also proved of equivalent value in comparison to whole grains at levels up to 10 per cent of the mash. For example, at a 10 per cent level the comparative gain per unit of feed consumed was 0.228 as compared to 0.232 for the control group. Cull pink beans were apparently well utilized with no observed detrimental effects.

Hempseed meal, a product which has been frowned upon because of its high content of crude fiber, efficiently replaced whole grains up to 20 per cent of the ration. This result is surprising in view of the somewhat unfavorable analysis of hempseed meal and is a good example of the ancient adage, "the proof of the pudding is in the eating."

# Changing Picture in Egg Marketing

By Charles A. Urner

*Condensed from a talk prepared prior to Mr. Urner's death.*

THE egg business is one of constant change and evolution. It is a moving business and in the main the trend has been toward a better product more economically distributed.

The driving force of competition within the industry itself has been constantly tending toward quality improvement, and economical production and distribution. Strictly speaking, each egg producer is a competitor of every other egg producer. Each wholesaler is a competitor of all other wholesalers, and so also is the case of brokers, jobbers and retailers.

Competition has been tending toward fewer independent links in the distribution of eggs and a more direct movement. Thus, more and more retailers are reaching closer to, or to, the producer for supplies and more and more producers are reaching closer to, or to, the consumer for an outlet. This has made it harder for the strict wholesaler to survive, and some have discontinued, while others have extended their services to the jobbing or even the retailing business. Only those performing a real service can survive.

### Trend to Mass Production

An important trend in the egg marketing business has been the result of an increasing move toward mass production in specialized egg factories which bear no resemblance to farms. These specialized plants have done much to level out part of the old curve between surplus spring and light fall-winter lay.

Today, our fall and winter season of light fresh egg production has been so greatly shortened that fewer refrigerator shell eggs per capita can be profitably carried from the spring to the colder months. Our so-called henneries have captured some of the trade formerly supplied by central and south central cornbelt farms, and then sectional rivalry for this fresh egg trade has developed between the specialized egg sections of the east and of the Pacific Coast. But each has done much for the other in promoting a quality consciousness among producers and in so standardizing quality and flavor that particular people can secure quality to suit at any season.

Nor is the central west content to lie down and lose out. Its egg industry is now turning to modern methods more generally and it bids fair to become a stronger competitor for industry place and industry volume.

The competition between distributors of shell eggs has been increased in recent years by the tremendous growth of the frozen and dried egg business. Broken out eggs in frozen or dried form have captured a large share of the prepared food outlets (such as bakeries, manonnaise manufacturers, etc.) formerly commanded by the cheaper forms of shell eggs. This change, especially breaking and drying near points of production, has effected a tremendous economy in transportation, has permitted better conservation of original quality and a vast reduction in former wastes.

Talk prepared by the author, prior to his death in June, for delivery at the American Institute of Cooperation, Pullman, Wash., July 11-15



### Foreign Competition

The Chinese war, by disrupting the dried and frozen egg industry in that country, has permitted domestic egg products to command more of our markets. Had this use not taken place and had tariffs been left unchanged, there was every prospect of a further large increase in our importations which were equivalent to over 1,000,000 cases of shell eggs in 1937.

This low spot in our protective tariff wall was, I believe, of far greater significance to the American egg industry and had a more depressing effect on price than our Department of Agriculture was willing to admit. Chinese competition had in 1937 practically killed our budding domestic dried egg business and showed signs of offering increasing competition with domestic frozen eggs in domestic markets. This Chinese competition has forced domestic breakers to develop more efficient and economical methods and facilities in order to survive.

### Competition With Other Foods

Competition from products outside the industry has been increasingly felt in recent years. Urban America is probably using fewer eggs for breakfast per person than in years gone by, while other prepared breakfast foods have made notable gains. This competition has also extended beyond the breakfast table. The average urban American today has a far wider choice of prepared dishes for hot or cold luncheons than ever before and the egg on the lunch table and in the lunch box finds ever-increasing competition.

To cope with this situation, the egg industry must fight with modern methods of publicity, in fact, it has already recognized its weakness and has done some eminently constructive work in maintaining its market.

Cooperative activities among various groups of competitors in the egg business have exerted an increasing influence on the standardization of egg qualities and the marketing of eggs. The oldest of these cooperative efforts are represented by our trade exchanges in the larger distributing markets. The largest of these exchanges, New York Mercantile Exchange, and Chicago Mercantile Exchange, provide facilities for trading in both spot and future contracts and the trend in their operation has been steadily toward a better safeguarded system and a truer reflection of values.

### Types of Cooperatives

Several recent cooperative egg marketing activities have been producer owned and controlled. They have taken three principal forms:

(1) Cooperative arrangement for sales where the producer does his own grading, as with the Quality Egg Club of Vineland, N. J., no expensive overhead being incurred.

(2) Grading, packing and distributing, up to the jobber or retailer, as typified by Pacific Egg Producers Cooperative and the associations owning it; such agencies not only market fresh eggs but often carry part of the spring surplus and—very important—set the price on their own merchandise most of the year.

(3) The other form of cooperative has been the cooperative country auction, as at Flemington, N. J. Such auctions have had a large growth in the east. They engineer the sale of the eggs of their producer members either through auction sale or, in case of a surplus, through some private arrangement.

Educational agencies, state and federal, have played an important

part in determining egg marketing trends both through the influence they have exerted on the quality of the product and to some extent on the development of marketing facilities. Their more notable influences in these directions have been in standardizing egg flavors through feed selection, in inducing better care of farm and hennery eggs between production and shipment to market, in developing sanitary and economical methods of breaking out eggs, freezing and drying, and in encouraging the development of auction markets for quality products.

### Government Activities

Recent federal activities of greatest importance have been:

Development for commercial use of federal grades. The use of these grades is voluntary. They were drawn and have been modified after a consideration of commercial conditions and their use as a means of inducing better care, buying on grade and selling on grade has in the main been beneficial.

The recent federal excursion into crop control activities has hurt rather than helped specialized egg producers who buy their feed — and the great majority do. Anything that puts up poultry feed prices artificially, increases egg costs and forces egg prices upward. Higher egg prices of course tend to limit use, other conditions being equal. So our specialized poultrymen have had their costs raised by crop control and the tariff doors left open enough to promote competition in important egg using fields with cheap imported, dried and frozen eggs. As a compensation the federal government has bought occasionally for relief to hold up the market, but these operations have had uncertain net influences, for it is most difficult to guess and forecast future egg supplies.

Recently established federal regulation of those egg exchanges providing facilities for future trading has tended to promote industry confidence in the integrity of such enterprises and has to date done nothing to hamper legitimate hedging operations which are used by both private and cooperative agencies.

### Discriminatory State Laws

State egg legislation in recent years has had a pronounced influence on egg marketing. Some of this legislation has been unreasoned and highly discriminatory against out-of-state products and products safeguarded from deterioration by adequate refrigeration. Some of it, when rigidly enforced, is very unfair to distant producers since the definition of a fresh egg established has in some cases a requirement which it would be difficult to merit were eggs subject to much vibration in transit. Some of it, when rigidly enforced, bears heavily on jobbing and retail distributors and subjects them constantly to fines unless they, for safety, always represent their eggs as of poorer quality than they are. Some of it has certainly favored the sale of eggs produced within the state concerned.

Improved facilities for preserving eggs have made possible deliveries to consumers from distant points in fine condition. The use of these facilities should not be hampered by unreasonable legislation. Several of these state laws are, in the main and in principle, soundly based. They establish permissive rather than compulsory use of the established retail grades. Such laws are the most satisfactory and are fair if the grading system is not unjust to outside producers. The national egg industry should try to find common ground for a modern state law and a grading system designed only for consumer protection and real quality improvement.



### Preferences for Large Eggs

Consumer preferences have some effect on egg marketing trends and in recent years there has been a wider tendency to carry brands of eggs through to the consumer, catering to the specific preferences and prejudices of specific types of eggs or specific shell colors. Consumer preference for large size has led in some markets to a constant demand for larger eggs and the question arises how far it is advisable for the producer to follow this demand for larger size. The physical well-being of the hen must be considered.

Looking back over a period of over thirty years of intimate contact with the egg trade of New York City I can truthfully say that the evolution toward a better order of things has been remarkable. Quality improvement in the product, reduction of waste, efficiency of packaging, transportation and refrigeration, economy in distribution (at least in all services where costs are open to adjustment through free competition), regularity of supply and more efficient pricing facilities have been notable achievements. The credit should be widely distributed among many agencies, including officials, educators, private enterprises and cooperative organizations of producers and distributors.

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## *Progress Under the National Plan*

In the 1937-38 year under the National Poultry Improvement Plan, poultrymen with 5,948,498 breeding chickens supplied hatching eggs to 1,478 hatcheries with a total capacity of more than 60 million eggs. Under official supervision, these breeders and hatcherymen produced close to 125 million chicks, or about a fourth more than the previous year.

States with the largest number of breeding birds qualifying under the national plan included Illinois, New Hampshire, Ohio, Massachusetts, Kansas, Iowa, Minnesota, Wisconsin, and Indiana.

J. D. Sykes of the U. S. Bureau of Animal Industry sees three encouraging trends in the year's work. First, an increasing proportion of the chicks produced under the plan were in the higher breeding stages. Second, a larger percentage than the previous year were officially tested for pullorum disease.

Third, compared with the previous year, nearly a fifth more female birds with official one-year records of at least 200 eggs weighing 24 ounces or more to the dozen, were mated in single-male breeding pens to males produced by dams with official one-year records of at least 225 eggs. These are the matings, known as U. S. Record of Performance matings, which supply the foundation stock for the major breed-improvement work under the plan.

—News release, U. S. Dept. of Agr.

# Do Imports of Egg Products Hurt The American Poultry Industry?

By W. B. Roby

*Condensed from San Joaquin Valley Poultryman*

WHEN the Department of Agriculture tries to create the impression that imported egg products in any form are not competitive with the domestic egg industry, the Department is following a course that lays it open to severe criticism.

When the Department makes the statement that the United States produces 250 eggs per person and imports only between one and three eggs per person, it is clouding the issue. The records of the Department of Agriculture clearly indicate that the economists or those who give market information recognize that the surplus of any commodity in any form tends to make the market price for the whole crop. If not, why so much interest in by-products, marketing agreements, disposal of surpluses by subsidy, purchase and distribution of surpluses to the unemployed, etc.?

Is it not a fact that the Department of Agriculture purchased approximately half a million cases of eggs in 1937 for the purpose of market stabilization? For this the industry was duly grateful.

Is it not also a fact that in 1937 the equivalent of approximately one million cases of eggs was imported from China in the form of dried and frozen egg products?

It is well known that certain users of egg products will use shell eggs when shell eggs can be purchased on a basis which is considered cheaper by the manufacturer, and vice versa.

If egg products in the frozen and dried forms do not have an effect on the egg markets of the country, why is it that every recognized market reporter, including the Bureau of Agricultural Economics of the U. S. Department of Agriculture, always includes in market reports the production and the holding of frozen eggs? Importations of dried eggs are also frequently included in such reports even though storage holdings of dried eggs cannot be reported accurately because they are frequently stored in warehouses which do not make regular reports.

The percentage of egg products to the total egg production of the country is given by the Department of Agriculture as being so small that it is of no economic importance to the industry. At the same time, in the April, 1938, Monthly Egg and Poultry Markets Review of the Department of Agriculture, the following statement is made:

"A supporting element in egg markets this month, as in March, has been the purchases by the Federal Surplus Commodities Corporation. April purchases include approximately 44,000 cases, which, combined with March purchases, makes a total of about 162,000 cases removed from markets during the past two months."

May we ask the Department of Agriculture how large a percentage of the entire egg production these purchases by the Federal Surplus Commodities Corporation represent? They



not only represent a very small percentage, indeed, but eggs so purchased were not even taken out of circulation. They went into consumption within the borders of the United States. In other words, there was no reduction in the actual quantity of eggs produced and consumed in this country.

When the Bureau of Agricultural Economics, in its Markets Review, recognizes that the purchase of eggs by the Federal Surplus Commodities Corporation was helpful to the industry, and if such purchases in the year 1937 were the equivalent of an egg and a half for each inhabitant of the United States, how can that same bureau claim that imports to the extent of three eggs per person during the year 1937 did not affect the price level of eggs? We are forced to conclude that the purchase of surplus eggs was of no benefit to the industry if imports did not adversely affect the welfare of the industry.

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## *Eggs Used in Making Vaccine for Horse Disease*

Following the outbreak of the most severe epidemic of sleeping sickness among livestock in years, more than 500,000 horses in the United States and Canada have been immunized by a new vaccine from virus grown on chicken embryos at Lederle Laboratories.

So urgent is the need for the vaccine, it was said, that air express is utilized to speed eggs from distant points to arrive at the Lederle Laboratories at Pearl River, N. Y., on the twelfth day of incubation, and to rush the vaccine to distribution points in the affected areas.

One shipment of 6,120 eggs in thirty-four cartons weighing 918 pounds arrived at the Newark Airport in the air express service of Railway Express Agency from Louisville, Ky. It left Louisville in the cargo compartment of a regularly scheduled transport plane at 9:20 a.m. and arrived at Newark at 4 p.m. Spring Lake Farm, of Wyckoff, N. J., the consignee, took delivery of the eggs at the airport and rushed them by automobile to Pearl River.

During peak of the epidemic from 40,000 to 50,000 doses of the chick vaccine were shipped daily from the Lederle Laboratories at Pearl River to Winnipeg, Minneapolis, Chicago, Kansas City, Dallas, New Orleans, Los Angeles, San Francisco, Portland, Ore., and Boston. The vaccine in small bottles is shipped, iced, in wooden boxes with paper and cork packing.

Chick vaccine, the result of a long series of experiments by Drs. R. W. G. Wyckoff, B. M. Lyon and J. W. Beard, of the Lederle Laboratories, was available for the first time this summer. It is said to have a 10,000-fold higher immunizing value than vaccines previously administered for sleeping sickness.

—News release from Railway Express Agency.

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¶ AFTER stray dogs killed 405 young turkeys on the farm of Nicholas Laigneil, Caroline County, Md., a Farm Bureau delegation from that county asked for enforcement of laws requiring collection of taxes on dogs to reimburse persons for stock killed by dogs.

*Traveling 20,167 miles by plane, auto, train and boat in . . .*

# Carrying the Poultry Congress Idea to South America

By James E. Rice
General Chairman, Seventh
World's Poultry Congress

*Condensed from a Letter*

YOU, no doubt, will welcome a word or two from us high up in the air while traveling 150 or more miles per hour, as smoothly as a bird of passage on migration. In fact, we feel as we imagine birds must feel when making their first trip southward, as many do, to Central and South America.

Each day is a rapidly moving kaleidoscopic series of events, scenery, people, places and with a striking change of scene as we go from country to country meeting new people and hearing new name entirely unfamiliar to us. But it is fascinating and stimulating as well as strenuous to carry the message of the Seventh World's Poultry Congress to the people south of the United States.

We have been most favorably impressed with the high quality of people whom we have met, of the great natural resources and of the unbounded possibilities of the countries of the Southwestern Hemisphere. The countries vary greatly, however, as might be expected from the wide contrast in their climate, altitude and location with respect to sea coast and seaports. Older in point of discovery as well as perhaps human habitation, great progress has been made agriculturally in recent years and still greater progress is under way. In nearly every country we have found great activity in public improvements. South and Central America are on the go.

It is interesting to observe the large emphasis which is being placed on public education and technical training. This, of course, is the basic hope for the future of all Republics, Democracies and every other form of government.

### College Trained People Numerous

Everywhere we meet those who have been graduated from universities and colleges of other countries, particularly in the U.S.A. Many of these technically trained men are occupying key positions in government, the professions and business. Let no one underrate the past and present or underestimate the future of Central and South American countries based upon the quality of the people and their natural resources.

The most intensive expansion in world trade may be expected here. Already the eyes of the business world are focused on the Southwestern Hemisphere. In the planes, at the hotels and on the streets, we find commercial travelers from many countries seeking markets for manufactured products or buying raw materials. The competition is keen and growing keener. To win this trade,



many are resorting to making trade agreements, preferential tariffs and directing the mass exchange of goods by governments. South and Central America has much to sell in agricultural products, minerals and scenery.

All of this implies the exceptional advantages which are offered to all countries who participate in the Seventh World's Poultry Congress and Exposition, which no doubt, will prove to be the greatest trading mart for poultry and poultry products and equipment, etc., which the world has ever seen.

Mrs. Rice and I had never before been up in a plane. However, we took to the air like "ducks to water." I imagine our lack of fear and complete freedom from airsickness was due to the large, powerful, steady planes of the Pan American Airways and to the confidence which we had in the two pilots, the modern radio equipment and the fact that we flew only during the day time and not at all in bad weather. Yes, and to the further fact that we made up our minds that we were going thru with the trip whether or not we liked flying.

### United States Leads in Developments

How about the development of the poultry industry in the countries which we had thus far visited? We have found about what we expected—that the United States no doubt leads the world, all things considered, in the advancements which have been made in the size of our industry and successful methods of management, due largely to scientific research and instruction in poultry husbandry in the 48 colleges of the United States and by the Federal Government. But we have no monopoly of ideas on the development of successful poultry farms. The same would be true of efficient methods of marketing. These are to be found frequently in many places in the countries which we have visited.

If the countries south of the United States participate in the Seventh World's Poultry Congress and Exposition as they indicate they expect to do, they may be expected to "feel the urge" to invite the World's Poultry Science Association to hold one of these international triennial events in one of the countries which appears to be best qualified to assume this large responsibility.

### Shed-Roof Houses Preferred

The poultry buildings of the countries visited, as might be expected, differ materially in type to meet the different climatic conditions. The laying houses are open and high in front to permit the sunshine to cover the floor. The shed roof house is most popular. To save labor, nests and feeding troughs are placed in the rear of the house. On this account the roof projection in the rear is wide so as to provide protection from the rain. Side walks are built both front and rear for convenience in doing the work and of necessity for use during the rainy season.

For the most part, laying flocks are confined to these open front houses all the year round. The partitions between the pens are constructed so as to protect the birds on the roosts against drafts, lengthwise of the house.

### Many Chicks Come from U.S.

In all of the countries visited, the single comb White Leghorns and Rhode Island Reds predominated, altho Barred Rocks and several other varieties are frequently seen. Most of the stock which we saw came origin-

ally or recently from the U.S.A. The poultrymen of all of the countries south of us have their eyes toward the U.S.A. for the purchase of poultry and poultry supplies. They provide a large potential market. We saw poultry feed concentrates for home mixing with local grain from two of the largest milling companies of the U.S.A.

We noted poultry stock in the first or several generations back from 18 poultry breeding farms of the States and on several farms from the same nationally known breeders. Frequently the transportation charges and commissions were equal or more than the first cost of the birds. Baby chicks and hatching eggs also are imported in large quantities. We rode with baby chicks from Florida down the East Coast of South America and met them coming down the West Coast from Texas.

We failed to find a copy of any poultry journal published in the United States, during our entire trip. This, no doubt, was due to the fact that they are published in English. However, we did see copies of two poultry journals published in Spanish. One of these was published as the house organ of the Poultry Association of Buenos Aires, Argentina, and the other in Santiago, Chile.

In Brazil and Argentina and other countries we found thriving producer-owned cooperative marketing associations, whereas in some of the countries most primitive methods of marketing on streets in public markets or from house to house.

In all countries which we visited, we received sufficient assurances to justify our expecting that each country will be represented by at least one official delegate and in some countries several delegates and a considerable number of visitors.

When one understands that to attend our Congress and Exposition and tours, it is estimated that it will cost nearly $2000.00 or more, we of the United States should take thought of the comparatively low cost for us to attend this great event, as in all probability another quarter of a century will lapse before we will have an opportunity to attend a World's Poultry Congress and Exposition in the U.S.A.

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MAHATMA GANDHI, India's philosopher and politician, refuses to eat eggs because he claims it means destroying life. A shrewd Hindu farmer agreed, insisted that several dozen eggs he imported for hatching purposes should not be subject to customs duties because the eggs are "living animals," which are duty-free in India. British Government authorities in India, however, after long deliberation, ruled eggs were subject to duty, since it would be difficult for customs officials to tell fertile eggs from infertile eggs.

A NEW method of delivering eggs was tried in East Anglia, England, when an aviator dropped a box, attached to a parachute, containing 200 eggs for soldiers in a camp. The delivery went astray, however, and was picked up some 16 miles away.

*Results of Experiments on . . .*

# Outdoor Brooding of Chicks

By A. R. Wood

*Condensed from Agricultural Engineering*

ABOUT ten years ago my company started experimenting with radiant-heat electric brooders. With the cooperation of the division of agricultural engineering, University of California, we finally developed a practical and efficient electric brooder. This was quite a departure from the conventional type of electric brooder on the market at the time. It had no curtain around the bottom edge of the hover, and the heat was provided by means of porcelain elements wound with high-temperature resistance wire which heated to a red glow. These elements were mounted in the top of the hover 2 feet above the floor. Above these heating elements was a large copper reflector which was so shaped as to deflect the heat downward toward the floor under the hover.

### Best Results in Open Rooms

We found that best results were obtained when the brooders were operated in open, well-ventilated rooms. By well-ventilated rooms is meant rooms with the fronts partially or entirely open and with a large opening in the back of the room to provide cross circulation. The opening at the back was arranged in such a way that the incoming air was directed upwards, so as not to create a floor draft.

The chicks brooded in the open rooms did so much better than those in the closed rooms that we emphasized this point repeatedly in all of our literature, and tried to educate our salesmen and dealers to follow up on this feature and insist on it. But here was a serious problem. It seemed impossible to get the poultrymen to ventilate their brooder rooms properly. They had been accustomed to the coal or oil brooder operated in a room as near airtight as they could make it, the purpose being to insure as nearly as possible a uniform temperature throughout the entire room.

Try as we might, we just could not get the poultrymen to realize the importance of ventilation, or what we meant by ventilation. Ventilation of a brooder room to many poultrymen at that time meant opening a small window at one end of the brooder room during the warm part of the day only, or having one or two of the spaces between the rafters and the top wall plate open. Most of them had never heard of brooding in an open-front house, and to have the front open and an opening in the back at the same time seemed to them to be courting disaster. We had many users in different localities who did follow out our instructions as to ventilation, with excellent results, but we could not very well ask these people to let us use their brooder houses as demonstration units for that community. Yet we felt that a practical demonstration would be the only way to bring the idea of ventilation forcibly to their attention.

We studied the problem further. Here we had an electric brooder

which provided a dry, uniform heat over the entire surface of the floor which the canopy covered. The canopy was high enough so that feed and water containers could be put under it and yet provide plenty of space for the chicks. The attraction light kept the space under the brooder light, so the birds could see to eat and drink. They had more space per chick under our electric canopy than under the average battery brooders. Why not try brooding out-of-doors in a wire pen? By using a ring of metal around the outside of the brooder there would be no cross draft. A pen of this kind would be cheap to build, and we could put them in a number of scattered localities without too much outlay and expense.

### First Test Started in January

The first step, of course, was to try out the plan at home, where we could watch it. We constructed a wooden platform measuring about 10x12 feet and enclosed it with screen walls 4 feet high, above which we built a gable roof. We purchased 300 day-old White Leghorn chicks and put them under one of our radiant electric brooders in this enclosure, with feed and water under the hover and a metal ring around it. It was January and the nights were often frosty and the days, when not rainy, were often cloudy and cold. We watched the brooder temperatures carefully and studied the behavior of the chicks, in order to make sure that they were not exposed to too much heat, which would tend to drive them away from the brooder into the cold, and yet provide enough heat to keep them comfortable.

The mortality was not greater than the average experienced by successful poultrymen brooding under what were generally accepted as ideal conditions. The chicks seemed to show far greater activity than chicks brooded in the regular brooder rooms. They feathered out more rapidly. The growth of the birds during the first two or three weeks appeared to be somewhat slower than that of chicks brooded indoors, yet by the end of the seventh week they had attained about the same size. We kept the heat on these birds 33 days, reducing the temperature about 2 degrees Fahrenheit every third day. The most satisfactory starting temperature we found to be about 88 degrees on the floor, 12 inches in from the edge of the canopy.

After the second day we took the feed and water containers out from under the hover and placed them around the outside of the canopy, about a foot or two from the edge.

### Chicks Frequently Got Wet

The idea has long been prevalent among poultrymen that baby chicks cannot stand getting wet. It was thought they would get sick and die. This did not prove to be the case at all in our experience. These chicks got wet practically every day it rained, and it rained on 10 different days during the 33 days we had heat on the birds. We could find no detrimental effects whatsoever to the chicks from their exposure to the rain. At first they spent more time under the brooder during the rainy days, but as they grew older they seemed to pay very little attention to the rain and went outside with utmost freedom.

We immediately arranged to make an outdoor installation at Hayward, one at Petaluma, and one at Rio Linda, California. We worked out a simple, inexpensive, wire netting 10x16-foot house. The frame was built entirely of 1x4-inch pine. The wire



sides were 4 feet high, with a gable roof 8 feet to the ridge pole. The material for this unit, purchased from any local lumber yard, costs between $15 and $20 and the unit could be built by two men in one day. This unit did not require any floor.

### Chick Mortality Below 5 Per Cent

The first year we made four outdoor installations in the localities named above. Average mortality of chicks brooded under these outdoor conditions did not exceed 5 per cent. The birds in every case were almost entirely free of the usual diseases and baby chick ills which the average poultryman has to contend with in brooding under hot-room conditions. Careful records were kept of the livability of the birds during the following two years. In each instance the mortality of the birds was much lower than that of birds brooded in hot rooms.

The chicks from one of these outdoor broods were used in a large experimental plant where feed formulas are developed and tried. At the same time, chicks from the same stock and of the same age, which had been brooded under hot-room conditions, were put in the experimental pens in this same plant. At the end of the first year the total mortality of the flock from the outdoor brooder was 13 per cent; the mortality of the flock brooded in the hot room was 37 per cent. The latter figure had been a fair average of their mortality in years past, on flocks brooded under hot-room conditions. Today, the management of this establishment sees to it that the chicks used for experimental feed tests are brooded in cold rooms or in open air.

The following season we made arrangements for installing twelve of these outdoor broods, scattered from as far north as Everett, Washington, to as far south as San Diego, California. By this time we had learned the technique of outdoor brooding, so that we could be reasonably sure of good results. Accurate records were kept of current consumption, daily outdoor temperatures, weather conditions, weights of chicks, and amount of feed consumed. Outdoor brooding, as it was conducted in these units, was successful beyond any question. And above all, we got our idea of ventilation across to the poultryman.

All told, there have been some forty of these outdoor broods raised with our brooders. They have been operated, in most instances, during the winter months. Average consumption of electric energy has been about 500 kwh. The average number of days the heat was required was about 35. Any good commercial feed proved satisfactory and a variety of commercial feeds were used, apparently with equally good results.

We do not advocate brooding out-of-doors for the commercial poultryman. We merely used these demonstrations to show that chicks lived, grew, and developed into healthy profitable pullets when they had a lot of fresh air, and that there was no danger of getting too much fresh air. A light, clean, open-front house, with a good air intake at the back, will give equally good results and will not expose the chicks unnecessarily to severe weather hazards.

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DURING 1937, 12,628 bakeries, representing 86.1 per cent of the nation's total bakery production, spent $24,623,631 for eggs.
—Pennsylvania Department of Agriculture Weekly News Bulletin

## *Moldy Eggs, Stuck Yolks and Black Rots*

A couple of weeks ago, a few of our buyers told us that they were finding moldy eggs in our U. S. Extras. Soon after, they were telling us that they found "stuck yolks," and later they were black rots in our finest quality eggs. The funny thing about it is that we had the same experience last August and two years ago too.

By "stuck yolks" we mean when candled the yolk is stuck to the inside of the shell, and of course when the egg would be broken the yolk sac would also break in a "messy condition"; at this same time mold will begin to form on the inside of the shell. The result is an inedible egg. The cause? We wish we knew.

It always happens during periods of very hot and humid weather. Mold on the outside of the eggs usually occurs at the same time. These weather conditions may continue until late September.

The suggestions that we have to offer are (1) that the eggs be held in a room that is not musty; as well ventilated as possible, yet kept as cool as is possible. (2) Keep eggs and egg cases six inches from the floor. (3) Avoid excess moisture, yet at the same time do not keep the eggs in a dry room. There should be no water standing on the floors unless the room is quite well ventilated. While these suggestions are quite general, it is evident that most of the trouble occurs in the egg holding rooms which are much too moist.

—Wooster (Ohio) Egg Auction News

## *Blackhead Following Fowl Pox Vaccination*

In certain restricted areas blackhead in chickens occasionally follows the use of fowl pox virus. Such losses usually occur in from 10 to 16 days after vaccination. It is presumed, in this instance, that the birds are already carrying the blackhead parasites and that they simply invade the tissues during the period when birds are suffering from the systemic shock caused by vaccination. It has been found that the use of pigeon pox virus in subsequent years makes it possible to avoid such a loss.

—Report of Disease Control Committee, Northeastern Poultry Producers Council

FOR those who wonder how old a chicken can get and still produce eggs that will hatch, Finlay McNaughton, of the Lanarkshire Poultry Association, England, hatched six lively chicks from eight eggs produced by an 18-year old bantam hen.

TO keep rats from eating his baby turkeys, Dr. Harry V. Fuller, turkey grower and former head of the science department of Valparaiso University, keeps a radio going full blast day and night in his poultry department. He says the turkeys seem to thrive on music, speeches and drama, but the rats do not care for the programs at all.
—Produce Packer.

*Results of a Survey on the 1937 Production of . . .*

# Frozen Eggs in the United States

By J. H. Radabaugh
Agricultural Adjustment Administration

*Condensed from a Special Report*

THAT the production of frozen eggs has continued to increase is a definite conclusion to be drawn from the study of the frozen egg industry just completed by the Poultry Section of the Agricultural Adjustment Administration. In 1937, there were reported 196 plants that produced approximately 225,000,000 pounds of frozen eggs.

### 196 Plants Operating in 1937

From various sources there has been developed a list of egg-breaking plants which is as nearly complete as possible. The initial list was the result of the 1935 egg-breaking survey and was supplemented by lists of the Bureau of Agricultural Economics, the Institute of American Poultry Industries, and the Urner-Barry Company. Through correspondence with members of the trade this list was corrected until it appeared that 196 plants were actively engaged in the breaking of eggs for freezing in 1937. All the plants included in the 1937 survey broke eggs for freezing purposes, but some of them also produced liquid as well as dried eggs. In this survey, however, only eggs broken for freezing purposes have been included. If in this survey the plants that produced liquid eggs had been included, as they were in the 1935 survey, the total number of plants listed as operating would have been 220, and total production of liquid and frozen eggs would have amounted to 237,593,000 pounds, or 6 per cent more than the reported production of frozen eggs as shown below. Eggs broken for drying in 1937 were reported to be 10,548,000 pounds.

### 224 Million Pounds in 1937

The production of the 193 plants that reported their operations for 1937 was 224,220,000 pounds as compared to 188,650,000 pounds reported in 1935 by 171 plants. It was impossible to obtain reports from three firms believed to have been in operation during 1937, as compared to five firms not reporting in the 1935 survey. In view of the fact that only three firms failed to report, it can be considered safe to estimate a production of frozen eggs in 1937 of at least 225,000,000 pounds. This compares with the 1935 estimate of 190,000,000 pounds. On the basis of 35 pounds of egg products to a 30-dozen case this would mean an equivalent in 1937 of 6,429,000 cases compared to 5,429,000 cases in 1935.

### Distribution of Plants

In 1937 the production of 182 plants was reported individually, which allowed a breakdown by regions. The production of 11 plants was reported as firm totals and amounted to 16,277,000 pounds. The 182 plants produced 207,943,000 pounds of frozen product. Table 1 shows the distribu-

tion of plants and their production by regions in volume and percentage for both 1935 and 1937. The regional breakdown is made on the basis of the Bureau of the Census areas. As in 1935, the West North Central Region —which includes the States of Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas —was the most important region in 1937 in the production of frozen eggs. In 1937 this region produced 46 per cent of the production reported by regions as compared to 43 per cent in 1935. The next most important area in 1937, as in 1935, was the East North Central Region which produced 27.8 per cent as compared with 30 per cent in 1935. Thus, in these two areas, the East and West North Central Regions, there were produced about 74 per cent of the total frozen eggs in 1937, and about 73 per cent of frozen and liquid eggs in 1935.

**Table 1**
**Plants Reporting Egg Breaking Operations in 1937 and 1935 with the Total Production and Percentages, by Regions**

| Region | Number of Plants | | | | Production Reported | | | | Number of Plants Not Reporting Production | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Listed Operating | | Reporting Production | | By Regions | | Regional Percentages | | | |
| | 1937 | 1935 | 1937 | 1935 | 1937 | 1935 | 1937 | 1935 | 1937 | 1935 |
| | | | | | 1,000 lbs. | 1,000 lbs. | | | | |
| New England | 3 | 4 | 3 | 3 | 1,272 | 429 | .6 | .3 | — | 1 |
| Middle Atlantic | 20 | 19 | 20 | 17 | 7,652 | 10,144 | 3.7 | 6.4 | — | 2 |
| E. N. Central | 36 | 28 | 35 | 23 | 57,857 | 47,683 | 27.8 | 30.0 | 1 | 1 |
| W. N. Central | 78 | 76 | 71 | 66 | 95,556 | 68,641 | 46.0 | 43.1 | — | 1 |
| South Atlantic | 1 | 2 | 1 | 2 | 936 | 64 | .4 | .0 | — | — |
| E. S. Central | 4 | 6 | 4 | 6 | 3,647 | 3,440 | 1.8 | 2.2 | — | — |
| W. S. Central | 24 | 18 | 18 | 17 | 29,588 | 21,288 | 14.2 | 13.4 | 2 | — |
| Mountain | 13 | 8 | 13 | 8 | 2,553 | 1,518 | 1.2 | .9 | — | — |
| Pacific | 17 | 15 | 17 | 15 | 8,882 | 5,972 | 4.3 | 3.7 | — | — |
| Total Reported by Regions | 196 | 176 | 182 | 157 | 207,943 | 159,179 | 100.0 | 100.0 | 3 | 5 |
| Total Not Reported by Regions | — | — | 11 | 14 | 16,277 | 29,471 | —— | —— | — | — |
| United States Total | 196 | 176 | 193 | 171 | 224,220 | 188,650 | —— | —— | 3 | 5 |

**Table 2**
**Number of Pounds of Eggs Broken During 1937 and 1935, by Class of Product**

| Class of Product | Eggs Broken | | Per Cent of Total | |
|---|---|---|---|---|
| | 1937 | 1935 | 1937 | 1935 |
| | 1,000 Pounds | 1,000 Pounds | | |
| Whole Eggs | 80,112 | 74,441 | 35.7 | 49.8 |
| Mixed Eggs | 18,632 | —— | 8.3 | —— |
| Egg Whites | 66,138 | 39,701 | 29.5 | 26.5 |
| Plain Yolk | 16,008 | 17,025 | 7.1 | 11.4 |
| Sugar Yolk | 26,717 | 10,750 | 11.9 | 7.2 |
| Salt Yolk | 16,277 | 7,673 | 7.3 | 5.1 |
| Glycerine Yolk | 336 | —— | .2 | —— |
| Total | 224,220 | 149,590 | 100.0 | 100.0 |



### Production by Classes of Products

All the plants included in the 1937 survey reported their production by class of product as shown in Table 2. In 1935, only 44 firms reported their production by class of product. An analysis of the two surveys indicates that a larger proportion of the total was produced as whole and mixed eggs in 1935 than in 1937. In 1937 about 44 per cent was reported produced as whole and mixed eggs, while in 1935 whole eggs represented about 50 per cent of the total reported production. The next most important classification was egg whites, representing in 1937, 29.5 per cent of the total as compared to 26.5 in 1935. The various forms of yolks represented a total of 26.5 per cent of the production as compared to 23.7 per cent in 1935. Four types of yolk were represented in these classifications; namely, plain, sugar, salt, and glycerine yolks. Only two-tenths of 1 per cent of glycerine yolk was reported produced in 1937 while none was reported in 1935.

### Distribution by Volume of Production

The distribution of plants by production size groups is shown in Table 3. An analysis of this table shows that about 51 per cent of the plants in 1937 were in the three size groups ranging from 200,000 to 2,000,000 pounds. These three groups of plants produced about 37 per cent of the total production. In 1935, these three size groups represented 55.5 per cent of the plants and produced 46.7 per cent of the total reported production. In 1937, however, the plants producing 2,000,000 pounds and over produced a larger proportion of the total than in 1935.

### Distribution of Plants by Markets

A further breakdown of the data for 1937 by markets (or cities) in

**Table 3**
**Number of Plants Reporting Eggs Broken During 1937 and 1935, Number of Pounds Broken, and the Percentages of the Total, by Production of Size Groups**

| Class Interval (Pounds—000 and 999 omitted) | Plants Reporting | | | | Production | | | |
|---|---|---|---|---|---|---|---|---|
| | Number | | Percent of Total | | Volume | | Percent of Total | |
| | 1937 | 1935 | 1937 | 1935 | 1937 | 1935 | 1937 | 1935 |
| | | | | | 1,000 lbs. | | | |
| Under 10 | 12 | 10 | 6.6 | 6.4 | 66 | 44 | .0 | .0 |
| 10 to 49 | 19 | 17 | 10.4 | 10.8 | 488 | 473 | .2 | .3 |
| 50 to 99 | 10 | 12 | 5.5 | 7.6 | 702 | 798 | .3 | .5 |
| 100 to 149 | 9 | 6 | 5.0 | 3.8 | 1,157 | 739 | .6 | .5 |
| 150 to 199 | 7 | 5 | 3.8 | 3.2 | 1,220 | 925 | .6 | .6 |
| 200 to 499 | 34 | 27 | 18.7 | 17.2 | 11,742 | 9,175 | 5.7 | 5.8 |
| 500 to 999 | 31 | 26 | 17.0 | 16.6 | 22,694 | 18,689 | 10.9 | 11.7 |
| 1,000 to 1,999 | 28 | 34 | 15.4 | 21.7 | 42,038 | 46,582 | 20.2 | 29.2 |
| 2,000 to 3,999 | 19 | 12 | 10.4 | 7.6 | 52,346 | 32,842 | 25.2 | 20.6 |
| 4,000 to 6,999 | 9 | 6 | 5.0 | 3.8 | 40,998 | 27,318 | 19.7 | 17.2 |
| 7,000 and over | 4 | 2 | 2.2 | 1.3 | 34,492 | 21,594 | 16.6 | 13.6 |
| Total | 182 | 157 | 100.0 | 100.0 | 207,943 | 159,179 | 100.0 | 100.0 |

which three or more plants operated gives an indication of the importance of these markets as egg-freezing centers. (Table 4.) The 17 markets included in Table 4 produced approximately 42 per cent of the total frozen egg production in 1937. Chicago was by far the most important market, producing approximately 18 per cent of the total production. St. Louis ranked second, with about 5 per cent of the total production and Omaha, third with about 3 per cent. New York by itself was fourteenth in importance, with less than 1 per cent of the total but, when combined with Jersey City, (as it probably should be), it became more important as an egg-freezing center, moving up to sixth place.

The growing importance of the frozen egg industry is indicated by the increasingly heavier proportion of total egg storage holdings represented by frozen eggs since 1916.

**Table 4**

**DISTRIBUTION OF PLANTS BREAKING EGGS FOR FREEZING IN 1937 BY MARKETS**

**Number of Plants, Volume of Eggs Broken and Percentage of the Total, in Order of Market Importance**

| Market | Number Plants | Production | |
|---|---|---|---|
| | | Volume | Percent of Total |
| | | 1,000 lbs. | |
| Chicago ..... | 10 | 40,283 | 17.97 |
| St. Louis ..... | 5 | 11,152 | 4.97 |
| Omaha ..... | 5 | 7,114 | 3.17 |
| Kansas City, Mo. | 4 | 6,842 | 3.05 |
| Minneapolis .... | 6 | 6,122 | 2.73 |
| Cleveland ..... | 4 | 3,824 | 1.70 |
| Jersey City .... | 3 | 3,798 | 1.70 |
| Seattle ..... | 3 | 2,360 | 1.05 |
| San Francisco . | 3 | 2,312 | 1.03 |
| Philadelphia .... | 5 | 2,029 | .91 |
| Los Angeles .... | 4 | 1,896 | .85 |
| Portland ..... | 4 | 1,491 | .66 |
| Denver ..... | 3 | 1,346 | .60 |
| New York ..... | 5 | 1,336 | .60 |
| Boston ..... | 3 | 1,272 | .57 |
| Indianapolis .... | 3 | 786 | .35 |
| Pittsburgh ..... | 4 | 194 | .08 |
| Total (17 markets) | 74 | 94,157 | 41.99 |

### Uses of Frozen Eggs

In the 1935 survey an estimate was made of the various uses of eggs and egg products. This information briefly summarized shows the principal uses for the various classes of frozen eggs to have been as follows: 50 per cent or more of mixed or whole eggs were used in bakery products; 50 per cent or more of whites were used in bakery products; 25 per cent or more of plain yolk were used in bakery products, and 25 per cent or more, in mayonnaise; 50 per cent or more of salt yolk were used in mayonnaise, and 25 per cent or more, in salad dressing; 50 per cent or more of sugared yolk were used in bakery products; and 50 per cent or more of glycerine yolk were used in bakery products. This indicates that the principal uses for most classes of frozen eggs were in bakery products, and second, mayonnaise and salad dressing. No attempt was made in the 1937 survey to obtain current figures on egg uses, but it is believed that this relationship has not materially changed.

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¶¶ WHEN lightning struck the chicken house of Richard Holmes, Greenville, Pa., during a summer storm, one hen had its feathers completely removed from one side, but did not stop laying—so the news reports claimed.

# Broiler Raising on the Eastern Shore

By Homer H. Pepper

*Condensed from Talk Before the Maryland State Poultry Council's Summer Meeting*

THE broiler business of today bears little resemblance to that of ten years ago when broiler growing was in its infancy on the Del-Mar-Va peninsula. One of the oldest broiler growers of this part of the country who, incidentally, was the first man to build a house for broiler raising alone in this section of the country, brought off in 1925 his first crop of broilers—1900 of his original brood of 3,000 (1,100 of the 3,000 died) were marketed at 58 cents per pound at a 2-pound average. Today he produces about 150,000, three times a year.

In 1927, 10 or 11 small loads of 80 coops were marketed weekly by all the growers, and that in the spring months, for broilers were not grown all seasons then as they are now. My estimate would be that today an average of 180 large truckloads of 150 or more coops are shipped each week, every week in the year. The U. S. Department of Agriculture reports that 42,042,590 pounds of broilers were received from the Del-Mar-Va peninsula in New York City alone during last year.

There are, to my knowledge, no government figures available for other markets, so I present to you my estimate. My figures show that 45 per cent of the broilers shipped from here go in to other markets including Philadelphia, Baltimore, Washington, Pittsburgh, and Newark. The total poundage of broilers shipped is thus brought to a conservative estimate of 70,000,000 pounds from the Del-Mar-Va peninsula.

There are about 1,200 farmers on the Del-Mar-Va peninsula producing broilers. Many of these, of course, are growing broilers as a sideline only. A grower in St. Michaels, Maryland, recently built a 525-foot broiler house after spending most of his life growing turkeys. A nearby grower is at present doubling his capacity of 40,000 chickens. Others are doing the same. It is evident that there is no let up in sight in the production of broilers in Delaware and Maryland.

I might mention that New England is forging steadily ahead and many houses are being built on Long Island at the present time. The government hatchery report for July shows an increase over last years' orders of 800 per cent for July and later delivery.

The unlimited quantity of broilers available makes the question of quality of supreme importance. Our greatest problem in marketing broilers is to sell the vast bulk of inferior chickens. Good broilers sell themselves. It is growing more and more difficult to place advantageously chickens of only fair quality, and it is growing more and more difficult to get a fair price for the average class.

There are several reasons for this unusually poor quality which is such a serious problem at present. I believe the principal reason is that too much emphasis is being placed upon quantity. The last two weeks in the growth of a broiler is the most important time from the quality standpoint. It is during that short time that the broiler develops the color in the legs

and the flesh and fills out in the breast and in the back feathers.

It is human nature for the grower to put his thoughts on the successful and early sale of his flock during these last two or three weeks, but it would be much more to his benefit if he would concentrate entirely on the broiler rather than on its early disposal. Together with the improper housing conditions, the grower is too anxious to get rid of his chickens just as quickly as he can. Often chickens are sold before they are fully matured when they are too thin and lack the yellow legs and red combs of extra fancy broilers. Thirteen to 14 full weeks are required to produce good quality broilers of good average size.

If the problem of over-production becomes serious, and it certainly threatens to do so at the present time, the man with the best grade broiler will be the one that sells his chickens. At present, he is the one that receives the best price. In the future, he may be the only one to receive any price!

As for the price, the old law of supply and demand is the biggest factor in the question of price. The more broilers sold, the lower the price on a given day. When broilers are scarce, up goes the demand, and, consequently, up goes the price, Thus, supply and demand check each other and a natural price level is maintained. It is then that quality counts.

There is a second important problem in marketing broilers in addition to the quantity-quality circle. And that is the shipper himself. At the present time, the shipper is in a bad spot. He is being forced by the grower to take losses that are not fair to him. Everyone will admit that broiler-growers are making very handsome profits at present, particularly during the last year. For the average grower, the cost of raising a broiler to a 3-pound average is from 13 to 17 cents per pound, varying with the season of the year. When market prices are averaged, we find that the grower has received this year an average of 19.9 cents. This is an obvious profit of 2.9 to 6.9 cents per pound.

The shipper's lot is not as rosy. Competition among buyers grows more and more keen as production expands, bringing prices to such a high level that often the shipper is forced to sell at considerable loss when the chickens are marketed. For example, cross-bred broilers which have been bought at the farm for 16 to 17 cents have sold in New York for 17 to 19. Consider that the shipper's cost in carrying the broiler to New York is approximately 3 cents per pound, and try to balance the two. During the past spring the loss has at times been stretched to 2 cents per pound. This is a serious situation, for growers need shippers to dispose of their birds to the best advantage, and shippers cannot stand continual losses such as they have had to bear recently.

Aside from these two very serious problems of a need for better quality broilers and necessity for more complete cooperation between the grower and the shipper, broiler marketing is smoothing itself out as it goes along. The future of the industry looks as bright as the past if we can just remember one thing—we must not kill the goose that lays the golden egg.

# What the Big Stores Do to Hold Egg Quality

By H. R. Bodtke

*Condensed from Poultry Item*

MODERN retail stores offer egg producers an exceptional market for eggs because they have unusual facilities for handling this delicate product properly.

Long experience has taught these modern merchants "consumer preferences" as to grade, and also the price range that finds greatest consumer acceptance. The latter factor is vital to egg producers because in the final analysis it determines the price level that over 90 per cent of egg producers will receive for their product.

Chain store buyers for instance, are experts in the egg business. Most of them have had extensive training and experience in the actual production of eggs, or in the procurement end of the business. They are thoroughly familiar with producer problems in all sections of the country. They must be thoroughly grounded in the various Federal and State egg laws. They must know markets, trends, stock available, seasonable production fluctuations and be familiar with the effect other foods have on possible egg sales.

With this background, every effort is made to deliver to the consumer as good an egg as possible.

### How One Chain Handles Eggs

Perhaps some of the actual operating steps taken by the American Stores Company may be of interest. Probably the best place to start is at the beginning—with warehousing.

As soon as received, the eggs are held under carefully controlled refrigerated temperatures. When the eggs are ready for candling, they are taken to air conditioned candling rooms, where the air is not only cooled but also washed.

After grading into the different consumer grades, they are immediately returned to refrigerators where they are made up into loads for the various branch stores. They are held in those rooms until the trucks are actually backed into the warehouse.

As the average run of a truck will not be over ten stops, they are exposed to normal temperatures a minimum length of time. In addition, they are delivered to the stores in mixed loads with butter, meat and other products normally held at much lower temperatures than eggs, which helps to keep the eggs cool.

Extra precautions are taken in the warm summer months to maintain quality. The best quality eggs are usually packed in cartons. Immediately on arrival at the stores, they are carefully placed in the refrigerators. A rotation system of stacking is used so that the eggs are kept moving out to the customers in order of receipt by the store, thus assuring uniformly fresh eggs for all customers. Another safeguard taken to assure fresh stocks is the system of at least two deliveries weekly to all stores. All cartons are legibly dated, with the printed injunction that the eggs are not to be sold more than five days after the date on the carton. This protects the

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(The Poultry Item, Aug.-Sept. 1938)

consumer and is a powerful advertising medium for high grade eggs. Satisfied customers bring repeat purchases.

### The Leftover Eggs

With the best estimates and precautions, however, there will occasionally be carton eggs left over, unsold when the time limit is reached. American Stores Company has solved this problem in a very satisfactory manner. Any carton eggs on hand after the expiration date are either removed from the cartons and sold in the next lower grade, or are returned to the candling department. During hot weather, "dummy" cartons are used for display purposes.

Eggs, like almost all other commodities, sell more readily when displayed. Therefore, in the cold winter months, week-end displays are encouraged on the counters.

The cheaper grade of eggs presents a problem that has not been properly solved. Since permitting, they are kept under refrigeration, although liberal displays are kept on the counters. Each night, however, they are removed to the coolest place in the store. If refrigerator space is not available, then they are placed in the cellar.

The way the egg is handled the first day or two, is often the answer to what kind of an egg reaches the consumer's table.

If egg producers and their organizations, such as the cooperative auctions, will install facilities to keep eggs cool at the source, the consumer will get better merchandise, the retailer will be able to handle eggs more economically, and the producer will receive a better net return on his investment of time, effort, and money.

The interest of a store company is identical with that of the producer. They both serve a common customer, Mrs. Housewife. It naturally follows that there is every reason for the utmost cooperation between producers and the food stores.

## *$1.38 Fine for a Bad Egg in Denmark!*

In Denmark, there are something like 60,000 poultry farmers who belong to the Egg Export Association. It includes over 500 egg collecting circles. About 15,000,000 pounds of eggs and poultry are sold annually. Each producer stamps each egg with a registered trade mark. They agree to deliver every egg laid except those used on their tables to the local circles and every time a producer slips in a bad egg, he pays a fine of $1.38.

—S. H. Devault, University of Maryland, in talk before Maryland State Poultry Council's Summer Meeting.

O. MARTIN, Lake County, California, claims the honor of putting the first turkey tamales on the market. His first output of 42 cans a day in 1935 was started as a trial to see if they would be popular.

The demand for turkey tamales has become so great that Martin's firm is constructing a new plant in Nice, Calif., which will handle 1,000 to 1,500 pounds of turkey, 3,000 pounds of corn meal and 2,000 pounds of flour daily.

# *QUESTIONS AND ANSWERS*

### Warm the Drinking Water

**Question** — Should the water for laying hens be warm enough to take the chill off in frosty weather, or should it be given directly from the well?—I. M. O., Minn.

**Answer** — Practically, there is no easier way of increasing egg production than to take the chill off the water. Several years ago, a simple experiment was run on two pens of laying hens; one was given unwarmed tap water; the other had water with the chill removed. The pens that had the water warmed, even so slightly, drank twice the amount of water, and furthermore, laid more eggs. Hens in heavy production will drink 5 or 6 gallons of water per 100 birds per day. Maybe this is the factor causing poor production that many of you are unknowingly facing.

—Poultry Tribune.

### Avoid Poor Feathering

**Question**—What can be done to help the birds to feather out better in batteries?—F. C. M., Ohio.

**Answer** — There are three things that are responsible for poor feathers in broilers that are kept in batteries. They are crowding, too high in temperature, and too dry an atmosphere. You can correct the matter of crowding very easily by dividing the birds up among empty batteries, and you can lower the temperature. The matter of dry atmosphere can be corrected by increasing the humidity through placing pans of water in various parts of the room.

—American Poultry Journal.

### Double Yolk Eggs

**Question**—My pullets are laying a large number of double yolk eggs. How can I stop them from doing this?

**Answer** — It is not uncommon for pullet flocks when they first come into production to lay a large number of double yolk eggs. This is because the production of yolks has not become regulated as yet, and oftentimes they are being produced at such a rapid rate that two or more yolks break loose and go down through the oviduct at approximately the same time. The passage of the first yolk causes the glands of the oviduct to start secreting the albumen, shell membranes and shell. The second yolk following closely behind takes advantage of this and as a result both are enveloped and one egg is produced. No method of influencing the production of double yolk eggs without affecting production is known. The best plan is to forget about them and as soon as the pullet production has become regulated the per cent of them will decrease quite rapidly.

—Washcoegg.

### Laying Mash Won't Cause Molt

**Question**—Is it true that if you feed laying mash one month before they lay their first egg, they will molt?—L. A. B., Mass.

**Answer**—At this time of the year, birds will molt only if they have lost weight or if they are affected with disease or parasites or if there is something radically wrong in their management.

—American Poultry Journal.

### Stud and Artificial Mating

**Question**—Please give me information on stud mating.—O. C. G., Texas.

**Answer**—In stud mating, the male bird is usually penned in a relatively small pen by himself. Once weekly, the females that are to be mated to him are placed in this small pen until mating has taken place. Where the practice is followed, it is customary to follow a definite routine by leg banding a series of ten or fifteen hens with a certain colored band, using another color to differentiate between the next series of ten or fifteen hens and so on until seven or eight series of birds have been so marked. A definite schedule of mating is then pursued so that the male is mated to a certain series of birds each day.

—Poultry Item.

### Crossing Leghorns and Barred Rocks

**Question**—What objections are there to crossing a White Leghorn male with a Barred Rock female?—D. S., L. I., N. Y.

**Answer**—I cannot see any particular benefit to be derived from such a cross. Plumage color and egg shell color will not be uniform in the offspring, and using the offspring for breeding purposes is out of the question if you wish to build up a uniform flock. If you do not have good stock to begin with, there is nothing to be gained by crossing two different breeds, and if you do have good stock in either the White Leghorns or the Barred Rocks, the offspring may not be as good as either one of its parents, and there may be an increased tendency toward broodiness. Good crossbreeding requires just as much wisdom and ingenuity on the part of the breeder as does systematic improvements of the purebreds.

—Everybodys Poultry Magazine.

### Soft Shelled Eggs

**Question**—I am finding quite a few soft shelled eggs under the roosting racks in the morning. Does this mean that my birds are not eating enough shell?

**Answer**—The use of roosting racks and screened dropping boards has resulted in people noticing the presence of soft shelled eggs more so than they formerly did. I serious doubt that your pullets are laying more soft shelled eggs this fall than previously but the birds are not able to get at the eggs this year and consequently not eating them up before you arrive in the poultry house in the morning.

Soft shelled eggs can best be explained on the same basis as the double yolked eggs; that is the production of yolks has not become regulated and the shell-secreting glands cannot take care of a second yolk following too closely after the first one. After the birds have been in production for a while, this problem will take care of itself naturally. I believe your birds are getting plenty of calcium and the addition of extra calcium to the mash would not lower the percentage of soft shelled eggs.

—Washcoegg.

### Pullets Usually More Profitable

**Question**—Which is better for starting a flock of layers, year old hens or pullets?—A. F. Allen, Iowa.

**Answer**—Generally speaking, a flock of pullets will lay better through the fall and winter than a flock of hens. However, if you can obtain hens at a lower price than pullets, it may be good business to buy them instead of pullets, especially since hens are more apt to lay all large eggs.

—American Poultry Journal.

*Careful Culling Helps in Predicting . . .*

# Layability and Livability

By Ralph Baker

*Condensed from Poultry Tribune*

LAYABILITY and livability of pullets, in comparison to other pullets of the same breeding, can be predetermined by the average poultryman. This is the conclusion reached by an Ohio State University undergraduate student who, with a fair degree of accuracy, foretold the comparative production and death age of 72 White Leghorn pullets.

Under the direction of Prof. E. L. Dakan, chairman, poultry department, Ohio State University, the student carried out a special problem in which he graded pullets into groups according to expected production and livability.

Predictions were made when the five and one-half months old pullets were placed in the laying house. The birds had been handled previously, and all "out and out" culls removed. Each bird was handled carefully and placed in one of three groups, designated as group A, group B and group C.

The pullets in group A were those that were expected to be good layers and to have good livability; group B were those that were expected to be medium layers, with medium livability; and those in group C were expected to be poor layers, with poor livability.

Pullets that were placed in the A group were those that were well matured and heavy, with bright eyes and heads, deep bodies, and with thin pelvic bones. Pullets in group C were those showing poor maturity and light weight, with dull eyes, pale heads, shallow bodies, and thick pelvic bones. The birds in group B were the "in-between" birds that were left after groups A and C were selected.

### Birds Checked After 10 Months

Ten months after the birds had been divided into these three groups according to their expected egg production and livability, it became necessary to move them to make room for other birds. At the end of this 10 months' period, the average egg production per bird in each group was as follows: group A, 107 eggs, group B, 77 eggs, and group C, 39 eggs. Fifty-three per cent of the birds in the A group had laid more than 100 eggs during the period; 39 per cent of the B group had laid a like number; and only 14 per cent of the C group had laid more than 100 eggs.

Next, the livability was calculated. In terms of days, after the predictions were made until the test tended, on the average, the birds in the A group lived 228 days, birds in B group lived 221 days, and birds in C group lived 145 days. In terms of percentage livability, 46 per cent of the A group were living at the end of the test, 47 per cent of the B birds survived, and only 19 per cent of the C birds remained alive when the test was completed.

In selecting the birds according to their "expected" livability, ruggedness

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(Poultry Tribune, Oct. 1938)

**Characteristics of Pullets in Each Prediction Class**

| | Group A | Group B | Group C |
|---|---|---|---|
| BODY | Deep, full | Not as deep as A | Shallow |
| CONDITION | Good | Fair | Poor |
| HEAD | Bright Red | Red | Pale |
| EYES | Bright | Bright | Dull |
| BEAK | Short, stout | Short, stout | "Crow-beaked" |
| PUBIC BONES | Thin, pliable | Thicker than A | Thick |
| PIGMENT | Deep | Deep | Light |

was the main determining factor. Ruggedness is a general term, but body weight and development and vigor and vitality were the factors used to make the selections. That the birds living at the end of the test were more rugged can be attested by the fact that their body weight at the time they were housed averaged 3.7 lbs., whereas the average weight of the birds that died before completion of the test was 3.5 lbs. when housed. Not a great difference in weight, but the results indicate that it had some significance.

### Practical Conclusions Drawn

Several general conclusions can be drawn from the results of this simple test. When it is considered that these birds had been handled previously and all "out and out" culls removed before the selection into groups was made, it seems logical that poultrymen should cull more rigidly before housing their pullets. Pullets of the quality of those used in group C are those that most poultrymen consider on the line and might keep in order to fill their laying houses to capacity.

It would seem that poultrymen should expect a larger percentage of culls and should start enough more chicks to make more culling possible. It is far more practical to cull out pullets of the C group type and sell them while they have market value, rather than to carry them out to the incinerator one or two at a time as dead birds during the laying season. Dead birds represent a total loss. In addition, they have taken space in the laying house and feed that might have been utilized properly by the same number of good birds.

There was nothing technical or difficult about the methods used by this student in dividing the pullets into A, B and C groups. The student was a novice, having little theoretical training along this line, and his practical experience and training were meager, as compared to the average poultryman. He had no assistance from the university poultry staff. Anyone having average "poultry sense" could make the same selections without having had any special training.

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BECAUSE the boiling point of water at sea level (212 degrees Fahrenheit) drops to 194 degrees at 10,000 feet above sea level, cooks aboard the China Clipper must allow 3½ minutes at 5,000 feet and 4½ minutes at 12,000 feet to boil 3-minute eggs.

# VIEWS OF THE EDITORS

### Broiler Surplus Threatens

Production plans by broiler producers in certain sections of the United States, particularly in Delaware, Maryland and Virginia, known as the Del-Mar-Va region, should be of more concern to poultry raisers than the alleged threat of the Japanese importations. The June hatchery report from the U. S. Department of Agriculture contains the information that 753 per cent more chicks were booked for July in the South Atlantic States than a year ago. At the same time, building activities in the Del-Mar-Va region, on Long Island, and in other parts of the Atlantic Coast indicate quite definitely that those chicks are intended for broiler production.

No one can criticise poultry raisers for capitalizing on the profit making opportunities in the broiler business. It must be apparent to all of us, however, that a division of the industry, like broiler production, easily can be over-expanded so rapidly as to bring ruinous prices almost before we have had a chance to rub our eyes. Of course, at the present time, storage stocks of broilers are only approximately 60 per cent as high as they were a year ago, but a large surplus accumulation can result in no time at all following a short period of unprofitable operations.

A great many broiler producers insist that it costs them approximately 15 cents a pound to take their broilers to the 3-lb. average size. This is done in about 14 weeks. So long as broiler prices are higher than that, there is a small margin of profit.

We're just afraid that some producers will be crushed in this mad producing rage, so this word of caution seems justified.

—Poultry Tribune.

### Value of the Congress

When F. H. B. of Missouri sent in his order recently for two tickets to the World's Poultry Congress to be held in Cleveland next summer, he said, "I expect to be there next summer even if I have to walk." There are many others who feel the same way about it, and I would like to take this opportunity to point out that the value to be obtained by poultrymen from this Congress depends in a large measure on what extent in which each one participates. Right now, when the Congress needs funds to carry on the preparations for this huge event, it is the duty of each one to give his support by purchasing tickets. However, it should not stop here.

Every one who has an interest in this big poultry industry should not only pay a dollar for the ticket, but plan definitely to be in Cleveland in 1939. If he participates in the Congress, he will see the educational exhibits and obtain the latest information of all phases of poultry; this is the way in which full benefit will be derived from the coming World's Poultry Congress. I have been informed that the poultry people in one whole county in Indiana are planning definitely to go and are making their arrangements for a special train. As a result of this participation, this county should show a definite improvement in poultry management and therefore an improvement in poultry income following the Congress.

—American Poultry Journal.

### Vitamin E Made Artificially

It should not be long now until we know the exact part that Vitamin E plays in fertility and disease.

Just recently the American Chemical Society at a meeting in Milwaukee announced that Vitamin E, without which no animals could reproduce themselves, is being made artificially in the laboratory.

It is not known definitely whether a lack of Vitamin E causes sterility in humans, but it is pretty well established that "E" is responsible for high fertility in animals, including fowls. And since egg production is reproduction and the same tissues are involved, the rate and level of egg production are dependent on a full supply of "E".

It is also known with certainty that Vitamin E is a complex like "B" and that there are at least three and possibly four different types of the vitamin. It has also been suggested that Vitamin E may function in a partnership relation with other vitamins or substances in the body. This may account for the fact that the relation of Vitamin E to disease, sterility, etc., has been hard to fix because the pure "E" vitamin, with its sub-vitamins, has not been available.

Now since the announcement of Prof. Lee Irvin Smith of the University of Minnesota that he and coworkers were the first in America to "build" a pure Vitamin E, it should be only a matter of time until we know just what effect the various elements in the "E" complex have in the life processes and whether or not they act alone or in partnership.

The B and G vitamin are now known to be very closely related to enzymes, metabolism and the life and health of cells and tissues. We're getting down very close to life itself in dealing with these things.

—Poultry Item.

### Price Affects Egg Consumption

It is probably true that there are many thousands of people who would eat more eggs if they could be sure of getting eggs of top quality and pleasing flavor. We have a mistaken notion, however, if we believe that all our problems on egg consumption would be solved if only top quality eggs were sold.

Price will always be a factor in the purchase of eggs. It is the same reason why most of us buy Ford, Chevrolet and Plymouth automobiles instead of Cadillacs or Packards. It is the same reason why there are more $18 than $50 men's suits sold. Food purchases are affected in the same way. If one foodstuff becomes high in price, there is a shift to something which is a bit cheaper.

The low priced eggs serve a definite need. Even if their quality is not what it seems it should be, there will be some people who will buy them because they are able to afford them. If only top quality and top price eggs are available, these people would simply quit buying eggs and turn to something else. It is a good point to keep in mind when selecting descriptive terms for different qualities of eggs under our state egg laws.

—Everybodys Poultry Magazine.

### Quality and Confidence are Needed

Before we can market eggs and poultry successfully in competition with milk and heavier, cheaper meats, we must learn how to get the quality up and the cost down. We talk of our billion dollar industry and forget it can as well become a billion and a half dollar industry by bringing the daily consumption of poultry meat up from 1-20 of a pound per person to 1-14 of a pound, and eggs from ¾ of one egg to 1⅛ eggs. These are small fractions of the daily per capita consumption of milk and heavy meat products. The chief reason why eggs and poultry rank so low in our dietary is the relatively high prices which either eggs or poultry of dependable high quality command and the second most important reason is that we do not ourselves have sufficient confidence in our products to go tell the world that they are wonderful food.

—U. S. Egg and Poultry Magazine.



### Taxes Cut Egg Sales

All taxes on industry must be added to the retail price that the consumer pays. Poultrymen will be wise to do all in their power to prevent taxes which make it harder to sell eggs and poultry.

The special chain store tax (Patman Bill) is an example. This tax must be added to the retail price of eggs and poultry meat just as it is added to other foods.

Consumers are more price-conscious today than anything else, particularly for a product that does not get much favorable advertising. Millions of women simply buy fewer eggs and chickens when prices go up. Even fractions of cents sometimes influence purchases.

The chain stores may or may not represent the last word in food merchandising. We believe it is reasonable to expect something better and even more efficient in the future. However, the chains are doing a mighty fine job and will be found in the front rank of any advance. They are creating a steady and profitable market for our best eggs and poultry. If the truth were known, the chains are probably spending more money to advertise eggs and poultry meat than any other single group. We will do well to work with them and encourage them in this effort, rather than make it impossible for them to function as one of the strong links in our merchandising program.

Anti-chain store taxes cut down family purchases of eggs and poultry. And even though some people are sympathetic to higher taxes on the chains, the fact remains that the largest chain in the country alone has six million regular customers and they are all potential egg customers, whose purchases of eggs may be lowered at any time.

—Poultry Item.

### Appropriations for Poultry Research

If there ever was a time in recent history when unemployment is a problem, it is now; a time when the number of unemployed trained scientists and technologists is large. And yet the departments of government which deal with problems of our industry appear to be niggardly in the extreme, of appropriations for poultry products research, for delving into new uses and the natural expansion of outlets through cooperation of the scientists with industry.

It would almost seem as though those who direct the spending of governmental money fail to get a perspective of their job. They are satisfied to rest when the farmer has been told how to produce more and the industrialists dealing with farm products have been regulated, or, again, when an over-supply has been dealt with by reducing production. Where are the government millions for research to expand the outlets for eggs, one of the greatest of American farm products? Strange to say, there seems to be more curiosity about developing new uses for soybeans, a recent Asiatic importation.

—U. S. Egg and Poultry Magazine.

# Diary of a Poultryman

By P. S. White
Egg Farmer, Wayne County, Ohio

*Condensed from Everybodys Poultry Magazine*

**Oct. 1**—It is a month of great responsibility, harvesting the pullet crop. A slip in judgment and it is very apt to take the profit of one bird to pay the deficiency of another.

**Oct. 2**—It seems to me that it is unfair business practice for a dealer in second hand egg cases to fill the case with empty cereal cartons, paper or excelsior, top it off with a flat and filler and sell the case as being sound. Yet this is exactly the condition I find in so many cases. If the auction didn't buy extra flats and fillers to take care of such shortages, I am sure I wouldn't know what to do. I know if I tried to sell eggs that have as poor interior quality as some of these egg cases, someone would call my hand forthwith. The chances are that the inspector Ralph Sheppard would tell me all about it before sundown.

**Oct. 5**—Did a little creosote painting today. The sun was nice and warm which caused the woodwork on the block house to be in a receptive mood. We had the creosote out in the sun too, and it certainly did spread easy. I am just sold on this creosote as a paint. I think it is the works. It takes several coats before it begins to cover the surface thoroughly, but this is also true of any lead and oil paint. And then after several coats of creosote, the color of the building is black. It is black, and there is no question about it. But who cares about a little color when utility is the main object? A gray block building and a black trim is a fair color scheme at that.

**Oct. 8**—Often times the wrong flip of the wrist in feeding mash results in waste. This wasted feed costs just as much as that which is consumed. Any way it is figured, the birds waste more than their share. All of our mash is fed from a 5-gallon bucket with a scoop. A little miss cue with the scoop and the feed is on the floor. Feed prices are down, but not low enough to allow for very much wastage.

**Oct. 9** — Verne Chamberlin and I held a conference on worms tonight. The question narrowed down to worm or not to worm. We layed down a basic fundamental rule: when in doubt, worm the stock. I ordered 3,000 worm tablets and he mailed the letter as he went through town on his way home. This is the first time I have ever used any worm medicine, but I just had a feeling I ought to do so. I have always thought that all birds had a couple of worms sticking around, but I am afraid a few birds might have a few more than their share. It won't take all of the tablets this year, but they will keep, and the attractive price of buying in quantity was appealing. We will worm only the pullets.

**Oct. 15** — When I woke up this morning, my left jaw was swollen about the size of a cocoanut—festered tooth. I am in a pretty fix now, don't hurt, but I can't eat. I have to eat in order to work, and there is so much work to do.

Not only are the nests in the block house to finish, but all the pullets are

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tc house. We are behind the schedule several weeks as it is without having a calamity like this cracking down on me. Fortunately, I was able to make the regular trip to town.

**Oct. 16**—Some folks say that this is Indian Summer, but I don't think so. We haven't had Squaw Winter yet. I always try to put off cold weather in my own mind as long as I can. I'll bet there are thousands of pullets that have been housed, pulling feathers today. Why it is just like a summer day and if the birds have been housed long enough to get restless—look out. After feather pulling comes cannibalism. Death usually stalks around the birds, but ignorance on their part is bliss, sweet bliss.

**Oct. 21**—We started housing pullets yesterday. It takes a little while to set up for business such as the proper location of the coops so as to expedite the work, getting the vaccinating table to function properly and getting a system to the work. All told, we housed 300, which was about enough for a starter.

It is a poor policy to fill a house all at one time. The change is so radical from what the birds have been accustomed to that it really is a hardship on them. Furthermore, it is very trying on the attendants. The birds don't know where anything in the house is, the water, feed or roosting quarters. Tonight, right at dusk, I had the entire lot, about 100, in the east house to escort to the perches. They didn't know where to go to sleep.

**Oct. 22**—Rain and did we move in pullets? One of the girls and I did nothing but vaccinate and administer the worm tablets. Harold kept us supplied with pullets so we could keep steadily at work. Altogether we have 800 birds housed, but we were working after supper tonight. This rain drove birds that had been roosting in the trees into the brooder houses. If the sun shines tomorrow, the chances are that not a bird will go into the houses.

By the way, I notice that I have overlooked mentioning for what we are vaccinating. It is pox, and we are using the pigeon strain administered by the follicle method. I have used the pigeon strain for six years and there has been no outbreak of pox, neither has there been any ill effects such as sickness or a drop in production.

**Oct. 23**—Moved in about 200 pullets. Guess we had too much regular Saturday work to do. I don't like to get behind with the week's work such as cleaning and egg packing. In other words, if the week's work is not finished by Saturday night, we get a bad start for Monday morning. A total of 1,028 pullets have been housed during the past few days and I guess that is about fast enough.

Donn has taken over the job of putting the chickens to roost. They are getting fairly well accustomed to the houses, enough at least to realize where the perches are located. They know, but don't always want to roost on them. In time, they will all learn and then we will be able to cut out some monkey business.

**Oct. 25** — Squaw winter, at least that is what I call it. Rain, sleet, snow, hail and we moved in the pullets, well, I reckon we did. Altogether, we have vaccinated and wormed over 1,500 and a few over 500 were treated today. The block house is well nigh full, only about 65 more to go. Both batteries are full, lacking four compartments. We are making three grades. The third, the little pale faces go in the batteries. They are not sick

by any means; they are just a wee bit under weight. All they need is plenty of feed and to be placed by themselves. Then let nature take her course. Usually these smaller pullets develop into good birds.

**Oct. 26**—The egg room has been functioning properly the last few days. Temperature around 50 degrees, humidity about 70 degrees. Packing eggs has become such a mechanical proposition with me that I can do it and also think about something else. And some of those thoughts are weird ones beyond a question of a doubt.

**Oct. 30** — I bought a dozen and a half 25-watt electric lamps for replacements. This afternoon, I took a bucket of hot water and washed the dust and fly specks from all of the bulbs on the ranch. Tomorrow at 4 a. m., the lights go on everywhere on the ranch. The old hens in the barn have been getting lit up at 12 a. m. This is early to get up in any man's country.

## *A Premium on Deviltry in Cockerels*

While I am feeling such a deep sense of satisfaction with my 1938 pulcrop, I am feeling an equal disgust with the cockerel crop. Of course they are good birds, but the improvement noted in the pullet crop is improved sex strength, and of course is also present in the cockerel crop, and is making veritable demons of them, and whether I will get them grown out without them eating up some of their brothers, waits to be seen.

One day just lately Mr. Kleinsmith was working in his shop nearby the cockerel pen and on going out to call him to dinner, I noted a full grown auto tire lying on the ground right in the middle of the pen, and the occupants thereof standing at a respectful distance craning their necks at it. When I asked "How come," he just remarked, "Well, they were acting so mean I couldn't stand it, and that tire was the first thing I could get my hands on and I let them have it." Soon after that he put a life-saving station for them, or, in other words, a lighting pole where birds that were being run down could light and be safe until they could recuperate.

Am I sorry for these underdogs? Sometimes I am, but very generally the sympathy is short lived, for well I know that had I extra yards and were I willing to shoulder the extra labor of moving out to other quarters, these birds that get rather worse for chasing, it would be only a matter of days before bossism would develop among them, and the same thing be enacted all over again. And so I say, leave them alone, and any that go under, even with a life-saving station on the ground, you are better off without. Perhaps that is just putting a premium on deviltry — I wouldn't know; but it just seems that in roosterdom the meanest devil to his own kind seems to be the one that scores. Perhaps to some the above seems rather hardboiled, but I can tell you with considerable force that while caring for the weak ones might be kindness, if you were dealing in humans with an immortal soul, it won't get you anywhere at all except bankruptcy if you apply it to a poultry business.

—Mrs. H. C. Kleinsmith in the Pacific Poultryman

# POULTRY RESEARCH

### Manganese in Ration

The role of manganese in the poultry ration has been subjected to further study by Caskey and Norris of Cornell University, it was reported at the Poultry Science Association meeting. They confirm that high calcium and phosphorus content of the ration is conducive to hock disease or —to use the technical name—perosis. However, the effect of high calcium and phosphorus levels can be cancelled by a proportionate increase in the manganese content.

The failure to prevent completely the occurrence of hock disease by the provision of adequate amounts of manganese in the feed is apparently due to the fact that some individuals are not capable of absorbing the manganese from the intestinal tract. The complete prevention of perosis, when manganese was injected into the chick, lends strong support to this assumption.

High levels of cod liver oil tend to aggravate perosis.

Rations low in manganese produced hatches averaging 45 per cent against 75 per cent for pens given adequate amounts of this mineral. Chicks from parents fed a ration low in manganese were often abnormal; the abnormality was characterized by head retractions, extreme nervousness, and occasionally head tremors.

Manganese improved the texture of the egg shell almost 50 per cent, as measured by the breaking strength. The ash content was also high when manganese was supplied in adequate amounts.

Lampman and co-workers of the University of Idaho found orchard grass to be a good preventive against perosis. Its efficiency in this respect is not surprising since the sample used in this test contained appreciable amounts of managanese, to be specific, at times as much as, f. i. alfalfa meal.

—Carl H. Schroeder in Everybodys Poultry Magazine.

### Egg Shell Formation

Recently, the South African Journal of Science reported experimental work by A. M. Gericke, M. J. Van der Spuy and U. W. Schmidt to determine the influence of limestone flour and bone meal feeding on egg shell formation.

Groups of White Leghorn pullets receiving a low mineral basal ration, basal plus 2 per cent bone meal, and basal plus 2 per cent bone meal and 3 per cent limestone flour, respectively, were compared over a one-year experimental period with reference to feed consumption, live weight, egg production and quality of egg shell.

Live weight differences between the groups were insignificant, both at the beginning and end of the trial. Both the basal and bone meal groups developed an abnormal appetite for grit during the course of the trial. The bone meal group produced the most eggs and required less feed per unit of production, while the bone meal plus limestone group was only slightly inferior to the bone meal group in rate of production, yielding heavier egg shells of higher calcium content.

Eggs of poor shell texture were more prevalent during the summer months (November, December, January and February in South Africa) than the other months of the year.

—Feedstuffs.

### Incubation Temperatures and Embryo Mortality

In a test of incubation temperatures at the National Agricultural Research Center, Beltsville, Md., a total of nearly 19,000 eggs incubated at temperatures of 97 degrees, 99¾ degrees, and 102½ degrees Fahrenheit gave some interesting results. The hatchability of fertile eggs at these three temperatures was 49, 85 and 24 per cent, respectively.

In the low temperature group, excessive embryo mortality occurred at developmental stages corresponding to 6-7 and 19-21 days of incubation at normal incubation temperature. In the high temperature group, the excessive mortality came at stages corresponding to 13-15 and 18-21 days.

A considerable number of embryos in both the high and low temperature groups developed with their heads in the small end of the egg, and in the high temperature group there were other malpositions as well, particularly head-under-left-wing and head-between-legs.

Over 400 pullets were used in these tests, and it was found that the high-hatching individuals were relatively high at all three temperatures, while the low-hatching individuals were low, regardless of whether the incubation temperature was high, low, or normal.

—Dr. L. E. Card in Poultry Tribune.

### Phosphorus Content of Egg Yolks

Inorganic and total acid-soluble phosphorous were determined in the yolks of 183 fresh and 154 storage eggs. The total phosphorous was determined on the yolks of 254 fresh and 307 storage eggs. The eggs were produced under controlled conditions to test the effect of administration to the hens of cod liver oil, sunshine and blue grass and also of two of the three given together and of all three given together. The results indicate that any one of the vitamin D supplements tend to increase the inorganic phosphorous and that all three together have a more marked effect than any one by itself. While the total acid-soluble phosphorous and the total phosphorous show tendencies towards a like effect, it is neither so marked nor so consistent.

In the yolks of storage eggs the total acid-soluble phosphorous increases and the total phosphorous decreases. The changes that occur in the proportions of the phosphorous fractions do not seem to be due to the vitamin D supplements. The ratio of total acid-soluble to the total phosphorus is greater in storage than in fresh egg yolks. It is an effect that is consistent in all the pens and, therefore, seems to have nothing to do with vitamin D supplements.

—S. E. Erikson, R. E. Boyden, W. M. Insko, Jr., and J. Holmes Martin in Kentucky Agricultural Experiment Station Bulletin No. 378.

### Pendulous Crop

Pendulous crop has been demonstrated by Asmundson and Hinshaw of the University of California (Reported at Poultry Science Association meeting) to be a heritable abnormality. Even though an individual may be hereditarily predisposed to enlargement of the crop, this deformity will frequently not make its appearance unless the temperature of the air is high and the humidity low. High water consumption prompted by long hours of bright sunshine, high temperature and low humidity, appears to help to cause the enlargement of the crop to develop among the birds so inclined by their breeding.

—Carl H. Schroeder in Everybodys Poultry Magazine.



### Transmission of Fowl Paralysis

Fowl paralysis, report (Poultry Science Association Meeting) McClary and Upp of the Louisiana State University, is apparently transmitted through the egg and by contact. Chicks from affected and from unaffected parents, grown in isolation, developed the iritic form of fowl paralysis (popuarly called glass eyes, gray eyes, pearl eyes, etc.) in 20 per cent of the flock as against 40 per cent among the groups raised on infected premises. Iritis was more prevalent among the chicks than their parents; this, too, suggests transmission through the egg. The eggs from which the isolated chicks were hatched were treated with chlorine. The treatment did not affect hatching results.

—Carl H. Schroeder in Everybodys Poultry Magazine.

### A Test With Crossbreds

With the widespread interest in crossbred chickens for broilers and for layers, it is helpful to have a report of a test of various crosses made at the National Agricultural Research Center, Beltsville, Md. The growth and egg production of various crossbreds were compared with the performance of standardbred Rhode Island Reds and White Leghorns.

The quality of the parental stock was found to have considerable influence upon the quality of the hybrid progeny. Different strains of the same varieties may produce quite different results in the hybrid offspring.

The results from the parental crosses studied in this investigation indicate that the average hybrid was superior only in respect to early body weight. The average hybrid chicken from purchased stock did not do as well in the matter of egg laying as did the average of the White Leghorn and Rhode Island Red stock used for comparison.

The best hybrid progeny in these tests came from crosses between Rhode Island Reds and Barred Plymouth Rocks and between Rhode Island Reds and White Wyandottes. These crosses, when obtained from good quality parental stock, produced practically as well as did the White Leghorns and Rhode Island Reds.

The hybrids showed more broodiness than did either the White Leghorns or Rhode Island Reds. Reciprocal crosses between broody and non-broody breeds and strains gave different results, indicating that broodiness is partly the result of sex-linked factors.

Considering the period from hatching to the end of the first laying year, the hybrids lived better than did the purebreds with which they were compared.

—Dr. L. E. Card in Poultry Tribune.

### Turkeys in Confinement

Keeping turkey breeders in confinement appeared to have certain commercial advantages, according to tests (Poultry Science Association Meeting) conducted by Charles and associates at the New Hampshire University. It permits the use of artificial light, resulting in earlier and heavier production. No differences in egg size, maintenance of body weight or hatchability was observed in comparison with the breeders kept on range.

—Carl H. Schroeder in Everybodys Poultry Magazine.

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NEWS reports from Montebello, Calif., tell of a turkey hen there which has laid two eggs daily on four different occasions.

# More Complete Poultry Statistics

By Alfred Van Wagenen
Cornell University

*Condensed from Everybodys Poultry Magazine*

WOULD you spend a thousand dollars or more remodeling that old barn or investing in a new and larger incubator if you knew there were — say—20 per cent more laying hens in the country this winter than last? Or would you, as a feed or supply manufacturer, like to open a new sales branch in the county or state that is growing in poultry population rather than in one where numbers are falling? In other words, would you like to know just how many chickens there are? And where they are?

The answers to these and other "vital statistics" questions of the poultry industry are important in the plans of the almost six million poultrymen and farm flock owners who reported poultry on their farms in the 1935 census. They are even more important to the uncountable thousands, or more probably millions, who cater to the livelihood of the hen and the distribution to consumers of her products.

The poultryman or other interested person trying to answer these questions has several sources of information. He would probably turn first to the United States Agricultural Census. Here he would find that on January 1, 1935, (the latest available figure, and it wasn't generally available untii June, 1936) there were reported 371,603,136 chickens over three months old on farms. Early estimates issued by the United States Department of Agriculture placed the number of chickens on farms on that date at 411,581,000. A later revision placed the estimate for January 1, 1935 at 389,958,000 (excluding those under three months old), and for January 1, 1938 at 387,251,000. This last figure was released on February 17, 1938.

In addition to these official figures, there are usually available various non-official estimates but these are generally irregular or available only to a limited number of persons. It is readily apparent that the various data does not agree. Such variation is, in itself, a strong argument for more reliable statistics.

### Why Official Figures Differ

There are several reasons for the differences in the official figures. The census enumerators usually take the basic data one or two months after the date to which it applies. They must rely upon the farmers' memory over the intervening period and for the preceding year on such items as numbers of eggs sold. Then too, it is not possible to get returns from all of the farmers.

The Bureau of the Census has greatly improved its technique and the last census is believed to be the most complete yet taken. Nevertheless, the fact remains that in the handling of such a vast amount of data, considerable delay in making available the results is inevitable, (only four of 100 questions on each of almost 7,000,000 returns in 1935 referred to poultry). The Census becomes an historical record before it can reach the people who use it.

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### Census Dates Varied

Another factor that makes the use of census data more confusing is the variation in date upon which the census is taken. In 1930 the date used was April 1; in 1935 it was January 1. Previous census dates varied from June 1 to April 15 to January 1. The seasonal trend in numbers and production of poultry makes this difference in dates of some considerable importance.

Thus, in order to get usable, current data the poultryman must turn to the estimates. These are supplemented by monthly figures on farm flock numbers, hatchery reports, young stock on hand, reported marketings, etc.

The actual numbers of layers on hand, eggs produced, market chickens raised, etc., are of real importance in the broader aspects of planning for agriculture. They are needed to assure the poultry industry its true representation in law making, extension, teaching, and research. Data for scientific economic research concerning the factors which affect prices and profits must be based on actual figures.

### What Changes Are Taking Place?

But the poultryman or market man is not directly interested in these actual figures. He knows the price the present market yields his operation. Working from the present, he wants to know the changes that are occurring and the probable effects these changes will have. Estimates of the important statistics are compiled frequently and made available to the public by government agencies. Large companies often make their own estimates. No matter what the source, these estimates need to be checked occasionally with a census enumeration.

### The Shift Eastward

Many poultrymen and others were greatly surprised at the amount of change that took place in the location of the poultry producing flocks of the country as reported in the last census (1935). Many feel that further changes have taken place since 1935 toward increased production in the Northeast, but no one knows just where or how much.

One of the chief handicaps to the securing of more adequate data appears to be lack of funds. The census is not conducted solely for the poultry industry, nor even for Agriculture alone. All branches of commerce are covered and each may take only its share of the total money available.

### Increase in Funds Needed

Last year an appropriation of $25,000 was secured from Congress for the purpose of collecting and preparing statistics on egg and poultry production. A fifth of this fund was used to obtain a breakdown of the 1935 census data for the more important producing areas by size of flock. The remainder was used by the Bureau of Agricultural Economics in analyzing its monthly sample flock reports and greatly expanding the annual sample.

Additional inquiries regarding intention to purchase chicks, consumption on farms, mortality of laying flocks, numbers of pullets not yet of laying age on hand have been possible. A commercial flock report is being prepared. Estimates of turkeys marketed have been compiled by states. All these and other new and improved statistics have shown the possibilities that exist in this service and the need for more. The Northeastern Poultry Producers Council has requested a new, budgeted item of $100,000 for this purpose.

The poultry industry is dynamic. It is capable of remarkably rapid changes in number and location of flocks as well as in size of flocks. The census can record these changes, but can do so neither frequently nor rapidly enough under present conditions to be of greatest value to those who need the information for current plans.

A small sample census covering carefully selected areas would provide trend information quickly and adequately and could be taken every year to supplement the regular enumeration at five year periods.

## *1,500 Hen Minimum for Efficiency*

An average number of 1500 or more birds to the farm is suggested in an efficiency program for New York state commercial poultry farms by farm management specialists of the state college of agriculture. This means, they say, the housing of more than 1800 layers in the fall.

Other points in the program are: an annual egg production of more than 18,000 dozens; a combination of chicks and pullets to sell, with market egg production; and as little capital as necessary to provide a favorable size of business. Usually $10,000 or more is required.

Good rates of production are next needed, according to Professor E. G. Misner. These include more than 150 eggs to the hen; more than 25 per cent production during October through December; a successful hatch of more than three-fifths of the eggs incubated, successful rearing of more than four-fifths of the original number of chicks; mortality of less than one-fifth of the original number; and the value of eggs to more than double the feed costs of the laying flock.

### Recommend Diversity

A diversity or balance of the poultry enterprise is also recommended. More than 20 per cent of the income from the poultry business should be derived from the sale of pullets and chicks.

Next, efficiency in the use of labor is part of the general efficiency program. This means more than 1000 laying hens for each worker, a gross income of more than $5000 for each man employed, and a labor charge, including the value of the operator's time, of less than 25 per cent of the receipts.

### Capital Turnover Within Two Years

Finally, efficiency is needed in the use of capital. The recommendation is for a rapid turnover of capital that requires less than two years for receipts to equal capital.

The basis of this program is a study of nearly 800 commercial poultry farms in the state which have flocks of 500 or more hens.

The records showed that a large number of poultrymen had been in other types of employment before entering the poultry business. Many storekeepers, teachers, salesmen, bookkeepers, and carpenters enter the industry.

From one-fourth to one-third of the poultrymen visited had been hired men on farms or were in other types of farming before becoming poultrymen. About 20 per cent of the poultrymen had other income, from outside sources. The average ranged from $410 to 1933 to $1307 in 1930.

—Condensed from news release issued by Cornell University

# Producing the Hybrid Guinhen

By E. M. Funk
University of Missouri

*Condensed from American Poultry Journal*

In the spring of 1937, Mr. Armand Haynes, Olean, Mo., observed a R. I. Red rooster mating with Pearl guinea hens. From the eggs laid by these guineas he raised 4 hybrids which were called to the attention of the Department of Poultry Husbandry, University of Missouri by C. C. Hale, a teacher at Olean. An examination of these hybrids showed that in many respects they were intermediate between the chicken and guinea.

Weights taken May 3, 1938, showed that the R. I. Red male weighed 6 lbs., one of the guinea hens 3.5 lbs., and the 4 hybrids 4.5, 4.5, 4.75 and 5.0 lbs., respectively. The comb was absent, but there was a small knob-like growth on top of their heads similar to that which occurs in guineas. These hybrids had yellow skin and plumage which showed some red color over the body, giving them a brownish appearance and gray marking in the wings similar to those of the Pearl guinea.

They possessed the wild disposition of the guinea, and made sounds similar to those made by guineas. Eggs laid by these hybrids were smaller than hen eggs, but larger than guinea eggs. Eggs selected at random on Mr. Haynes' farm weighed as follows: chicken egg, 62 grams; guinea egg, 36 grams, and a hybrid egg, 44 grams. They had the shell texture and shape characteristic of chicken eggs. The hybrids were well fleshed, and their shanks were quite similar to those of guineas, being dark in color and small in size.

Such hybrids have been reported previously but the writer has been unable to find a description of them or a photograph showing some of their characteristics.

Tegetmeier in his Poultry Book published by George Routledge and Sons in 1867 stated, "Cross bred birds between guinea-fowl and common fowl are rare; when produced, they are true hybrids, being perfectly sterile and incapable of reproduction amongst themselves or with either of the species from which they were derived."

Wright in his New Book of Poultry published by Cassell and Company, 1902, stated. "Hybrids have occurred between the Guinea fowl and common poultry. We know of one with a Dark Brahma hen. The progeny in all such cases is, of course, very wild and sterile. The guinea cock has also been known to cross with a small turkey hen occasionally."

### Chicken Hybrids Are Popular

In recent years various hybrid crosses have been made in chickens and have become very popular. Advantages of hybrid crosses are: an increase in vigor over the original parent stock, a general improvement in egg or meat production, and the ability to determine sex of chicks at hatching time by color of plumage or rate of feather growth.

The Guinea—R. I. Red cross, however, while perhaps of no economic value, is of interest because it is seldom seen.

—E. M. Funk, University of Missouri, in American Poultry Journal for Oct., 1938.

# TIMELY POULTRY HINTS

## *Houses Need Litter*

A good covering of litter on the floor of the poultry house is essential for a comfortable house. Litter not only serves to keep the floor warm and dry but also serves as a good medium in which to feed scratch grain and encourages the chickens to exercise. Such materials as peat, shredded cane, oat hulls, straw, shavings, etc., may be used. There is less difficulty with damp floors if the more absorptive litters are used such as peat, shredded cane, and oat hulls. It is well to have a covering of from 3 to 5 inches of these absorptive materials or 6 to 8 inches of straw or similar material.

—American Poultry Journal.

## *Repair the Leaks Now*

Before the rainy weather sets in and cold weather arrives is the time to repair those leaky roofs and make other repairs in the poultry houses. See that your houses are in good condition now. It will pay to use high grade roofing materials if repairs are necessary.

—Everybodys Poultry Magazine.

## *You Can Prevent Pickouts*

If your birds are inclined to pick and you cannot break them of this habit, the use of commercial anti-pick devices may be the solution to your problem. It is only good business to do what you can to eliminate preventable losses. Some of these devices are attached to the vent of the bird, others to the head. Whichever you use, follow carefully the directions of the manufacturer.

—Everybodys Poultry Magazine.

## *Get Pullets Housed*

Even though some of the later hatched pullets are not quite ready to lay, it is unwise to let them stay out on the range any longer. The weather from now on will be more or less unsettled, and it is a mistake to let these young pullets stay outside and roost in the trees. Not only are they liable to contract colds and their vitality is apt to be lowered, making them susceptible to diseases, but they will not make a very satisfactory growth.

—American Poultry Journal.

## *Select Your Breeders*

By October, the wise poultryman should have made the final selection on his breeding males. Be sure to keep over enough "extras" to take care of early losses. Yearling hens to be retained for breeding should also have been selected. If early winter eggs are to be used, it may be necessary to "force molt" them so that a proper rest can be given.

—Poultry Item.

## *Good Chicks Pay Best*

If you are getting chicks to raise this fall and winter, it is well to remember that the best are none too good. Poultrymen who try to cut down on expenses by purchasing cheap chicks usually find that mortality is much greater, growth of the birds is much slower and the final results are much less satisfactory than if they had spent a few cents more for good chicks. As one poultryman put it, "You're licked from the beginning with poor chicks."

—Everybodys Poultry Magazine.



## *Watch for Rats*

During the fall months after the crops are harvested, rats begin to look for places to spend the winter. It is always a good idea to check over the poultry houses and eliminate any chance of the pests getting in. All holes should be filled up and all rubbish piles removed so that the rats will not have a chance to make a home. If they have gained entrance to some buildings, a good rat poison can be used very effectively. It is always a good idea to have a rifle handy to shoot these pests when seen, and a dog will also help keep them clear of the buildings. Good poisons are available. It is possible to obtain poisons that can be used without danger to poultry and other livestock.

—American Poultry Journal.

## *Enough Furniture*

Crowded housing conditions are a common source of trouble, but it is also a poor practice to allow the usual 3½ or 4 square feet of floor space per bird and then supply about one small mash hopper for the flock. One hundred birds should have at least 30 feet of feeding space, and an 8-gallon water fountain.

—Poultry Tribune.

## *Hold Turkeys Not Ready for Market*

Experienced turkey growers know that all turkeys are not ready for market at Thanksgiving time. The time that they were hatched or the rate of growth may make considerable difference in the time by which turkeys are ready for market. Even in flocks of turkeys that were hatched in sufficient time to be ready for the Thanksgiving market, there will doubtless be a few that need just a little while longer before they will be ready. It will pay, therefore, to hold these birds over for the Christmas market, or even later, rather than to attempt to sell them now.

—American Poultry Journal.

## *Be on the Job*

Take immediate notice of ailing and dead birds, find out what is the cause, anl use dependable practices for treatment or to prevent spread of disease. Survey your plant and methods from time to time with a critical eye, as of a stranger, to see if you can find "what is wrong with this picture." By such study dangerous situations may be forestalled, and much trouble avoided.

—Rhode Island Red Journal.

## *Place Feeders Carefully*

Don't have feeders too high, particularly for heavy breeds. Have plenty of them. Put a feeder on the roosts for the timid pullets that don't come down. For wet mash have some troughs that you hang up, putting them down on the floor only when you are using them. Feed the grain in these same troughs. It is more sanitary than feeding it in the litter.

—American Agriculturist.

## *Watch Body Weights*

Watch body weight of pullets and increase the grain or use fleshing pellets if they begin losing weight. Remember that they should continue to grow for several months, as well as lay eggs.

—Poultry Tribune.

A Survey on the Newer Investigational Work on

# Fowl Paralysis

By Dr. Erwin Jungherr
Connecticut State College



RECENT compilations of mortality data obtained from diagnostic laboratories, egg laying contests and experienced breeders suggest that over 60 per cent of adult poultry mortality may be ascribed to fowl paralysis. Earlier mortality records are often misleading because each of the various forms was booked under a different scientific name thereby obscuring the issue. Similarly, the poultry breeder who is familiar with the paralytic form on range may overlook the connection with the tumor cases occurring in the laying house.

The importance of the fowl paralysis problem to the poultry industry at large can be seen from the fact that the Federal Government has taken steps to erect a special laboratory at which a cooperative study of this disease is planned on a large scale. A similar attack on the problem by concerted research is contemplated in Great Britain.

### Cause of Fowl Paralysis

The majority of investigators agree that the disease is caused by an invisible disease agent that passes bacteria-retaining filters and in general, belongs to the group of filterable viruses. There is practically no experimental evidence that microscopically visible organisms such as coccidia or bacteria are directly responsible for the development of fowl paralysis. On the other hand, the possibility must be admitted that infection with such visible organisms may intensify the symptoms of the disease in birds already affected with fowl paralysis.

An interesting theory was suggested by Emmel in Florida who claimed that the toxins produced by paratyphoid germs — first cousins to the pullorum germ in the bacterial world —cause the various manifestations of fowl paralysis. Confirmation, however, of this theory is completely lacking.

The question which really strikes at the root and which has held the scientific world agog, is whether the so-called virus responsible for this type of disease, is a living or a nonliving element. Some evidence for the latter opinion has come from the studies on plant virus diseases by Stanley. In the language of the practical poultryman, the answer to this question will finally indicate whether fowl paralysis is due to an infection from the outside or whether the disease may develop spontaneously in the bird, because something has gone amiss in the chemistry of the body.

### Transmission

Aside from the transmissibility of the disease by artificial injections, the evidence is growing as to the transmission of the disease by means of fecal droppings or contact, especially during the brooding period. It has been stated by Lee and his associates, that infected litter may remain dangerous for over one year. Only minute quantities of infective blood or tissues are necessary for successful transmission. In line with this observation Johnson has shown that minor injuries such as occur in fowl pox vaccination are sufficient to spread the disease if present; blood sucking lice and mites are also under suspicion.

The question of the transmission of the disease through the egg has two separate phases: that of direct transmission of the actual disease agent as it occurs in pullorum disease, and that of hereditary transmission of susceptibility. Gibbs favors the former interpretation principally on the basis of the frequent affection of the ovary with fowl paralysis tumors. The egg cell may be so closely surrounded by tumor cells that actual invasion is not impossible.

Hereditary susceptibility and resistance to tumor-like conditions has many supporters not only among students of fowl paralysis but also of tumors in mammals. It is well known to poultrymen that the most disastrous outbreaks, just as in any other infectious disease, occur if susceptible stock is mixed with resistant stock or vice versa. The hitch, however, in the situation is that we do not possess any definite scientific means to determine the status of susceptibility except by the method of trial and error.

### Control Measures

Control measures as known at the present time must be based upon a long-time program: Selection of susceptible unaffected stock if you do not have the disease, or of resistant stock if the premises are already infected. While this would hold from the theoretical standpoint, in practice the best guarantee seems to be to start with stock from old breeders of both sexes and then continue to raise your own replacements from old survivors as far as possible. Hays in Massachusetts has shown a remarkable decrease in the mortality by the latter method. Good sanitary practices during the early growing period decrease apparently the potential spread of the disease by contact.

During the past year, an announcement by Butler and Warren from Montana on the control of fowl paralysis by wheat germ oil, a potent source of the sterility vitamin (E), has exerted wide-spread attention. Anderson and Schaible from Michigan using wheat germ meal were unable to support these claims. In our own laboratory field cases of paralyzed chicks were treated with daily doses of wheat germ oil over a period of 4 weeks, without improvement. In several cases, the diagnosis was established by the operative removal of part of an ovarian tumor before treatment.

Following treatment for 4 weeks, the tumors were found not only to be completely restored, but even much larger than at the beginning of the treatment and this after a dose of wheat germ oil had been given per bird, which is supposedly sufficient for the prophylactic treatment of a ton of feed. Actual injections into the muscles as advocated by some enthusiasts left a fistulous tract which disqualified the meat for human consumption.

In addition to these results obtained in the laboratory, seven different field outbreaks are on record in chicks which had been fed commercial wheat germ oil-fortified rations since the day of hatching.

While the observations made so far do not support the original claims, the problem of the usefulness of wheat germ oil in poultry rations should be treated separately. Containing not only an anti-sterility, but also a

Condensed from Talk at Summer Meeting of Northeastern Poultry Producers Council, Ithaca, N. Y., June 21 and 22, 1938

growth factor, added wheat germ oil may perhaps be beneficial. Here, one is concerned solely with the question of whether potent wheat germ oil has a direct specific inhibitory effect on the fowl paralysis virus or whether it indirectly strengthens the general resistance of birds against the onslaught of disease. The question of dietary control of fowl paralysis however, deserves further study before arriving at a final conclusion.

## *Another First for the Hen*

The hen was the first test animal to be used in the study of vitamins, and was also first in the use of bacterial vaccines, and in the form of the egg she was the most adaptable in the first embryological studies. Now the lowly hen triumphs again. This time she lends herself to the difficult and almost impossible task of growing filterable virus in the laboratory.

A word of explanation here relative to the various forms of disease germs may not be amiss. The small microscopic animal parasites are classified as Protozoa. These include such germs as Coccidia, which cause coccidiosis in chicks, and Amea, which cause blackhead in turkeys. The vegetative forms are largely bacteria, such as S. Pullorum, which causes Pullorum disease, and B. Avisepticus, the cause of fowl cholera. Other vegetative forms which may cause disease are certain forms of yeast and mold. The third type of disease-producing organism is the filterable virus. These are so small that they are invisible even with the use of a microscope.

Bacteria are cultivated very readily by artificial means for the purpose of preparing vaccines. Protozoa may be cultivated in the laboratory artificially, but not without considerable difficulty. Vaccines are not prepared from Protozoa for the purpose of immunizing against Protozoan diseases.

Filterable viruses are the cause of many diseases in man and animal, such as Small Pox, Fowl Pox and Laryngotracheitis. These viruses are used to produce vaccines, and until recently, the only way to cultivate them was by producing the disease in a susceptible animal, then utilizing the disease tissues in the preparation of vaccines. Investigators have at last found a very satisfactory means of cultivating a virus by making use of fertile hens' eggs, which are incubated ten days or more, then inoculated with the filtered virus. This is accomplished by cutting a window in the shell and shell membrane of the egg. Then, after inoculating with the virus, these windows are again sealed and the egg incubated for several days more. The virus grows in pure form on the membranes surrounding the developing embryo, and may be collected for the preparation of a vaccine. This provides a more satisfactory method of producing a large amount of virus from which to prepare vaccines than the use of live chickens or other animals. The advantages of this new method of preparing both Fowl Pox and Laryngotracheitis vaccines are:

1. The elimination of all transmissible diseases.

(a) No contamination by other bacteria.

(b) No possibility of Septicemic contamination.

2. Severity of pox vaccination reaction greatly reduced.

3. Elimination of guess work by employment of scientific methods.

—George Kernohan in Nulaid News for July, 1938.

# How Can You Change Consumer Buying Habits?

By James H. Buswell

***Condensed from U. S. Egg and Poultry Magazine***

THERE are ways to unsnap the handbag of the housewife and cause her to spend money for eggs and poultry products. In the April, 1937, issue of this magazine appeared an article by Kathryn Bele Niles entitled "Changing Consumer Buying Habits by Teaching Teachers." Yes, that can be done. A good teacher makes an acceptable pupil. Youth, also can be taught. But when we take on full maturity, do we not ("we" meaning the average individual) resent a definite educational process and are we not persuaded to buy through more kindly methods?

At this moment there is much interest in ways and means of coaxing a housewife to break more eggs over her kitchen range, to replace other breakfast food with good old-fashioned bacon and eggs, to use more eggs in her cooking and baking, and to serve chicken more frequently. It is to be hoped that, as the immediate need for promotion of eggs becomes less imperative, this interest in "selling our industry to the public" may not die down, because a permanent, year-after-year effort — when times are good and when times are bad in the egg and poultry industry—will definitely fill up some of those deep, dark, tragic valleys and maintain the industry on a more profitable level for all operators.

### Appeals to Eyes, Appetites, Emotions

Now in order to help answer the question, "How can you change consumer buying habits?", suppose we first analyze food advertisements in national magazines. It appears that the pulling power of these gorgeous colored advertisements is gained 75 per cent through the quick, superficial appeals to eye, appetite and emotion—only 25 per cent of the messages being "reason why" or educational copy.

Not that housewives are dumb! They are simply too busy to be educated unless that process is made exciting, colorful and pictorial.

### Good Displays Sell More Eggs

A display of eggs before Easter, containing several 15-dozen size cases, with eggs (dummy eggs, of course) in the top deck arranged like a cross, has an emotional appeal that lifts the window or floor display above the humdrum and stimulates sales.

A poached egg on toast, mounted on a lovely yellow breakfast plate, centered the white enameled window of a restaurant one morning and really sold eggs.

Before men in the home can be made to say, "Why don't we have eggs once in awhile?" you've got to make their mouths water with a word picture (and a beautiful photograph if possible) of ham and eggs. Twenty years ago the average breakfast consisted of ham and eggs or bacon and eggs. Today eggs on the breakfast table have largely been replaced by patent breakfast foods, for the simple reason that these large corporations constantly appeal to the consumer

with four-color pages, billboards and sampling campaigns.

Mothers can be persuaded to buy more eggs—and children to eat them—with copy like this: "Deanna Durbin, child singing sensation with Eddie Cantor, has learned as a schoolgirl of the recent experiments that prove eggs help ward off colds and actually increase the length of our lives. Scientists and dietitians are advising everyone to eat more eggs; because they are rich in vitamins and minerals, they aid in building general health. Hollywood has been one of the first to take up the new vogue of eating eggs regularly."

Just saying "Eggs are your best food, eat more of them" is not enough.

### Careful Choice of Words Pays

W. P. Coleman in the American Poultry Journal informs us that "One poultryman's advertising effectively suggested that his eggs were delicious by mentioning what his layers ate. He did not bluntly mention mash, scratch and water. Instead, he wrote of sun-ripened grain and alfalfa leaves, ground to a powder with calcium, seasoned with cod liver oil and iodine. Plain water was not good enough; his layers enjoyed fresh, sparkling spring water. And for an additional treat, he supplied them with rich Jersey milk. Crisp leaf lettuce from the garden was a tidbit. Was it any wonder," he suggested, "that eggs from these chickens contained abundant vitamins; that they were delicious, nourishing and healthful?"

One of the great milling corporations recently printed a dollar book entitled "49 ways to SELL EGGS for More Money." Remember that this book was planned for the producer. Each of the 49 ways was demonstrated with a fine, large, cheerful photograph — emotional in appeal, although the purpose is educational.

Included among the 49 markets for eggs, suggested in this book, we discover housewives, restaurants, milk routes, hospitals, summer camps, tea rooms, school cafeterias, steamship lines, and so on.

### Housewives are the "Key" to Sales

But No. 1 in this list of 49—"housewives"—is the "key" to increased egg sales. By persuading the great American family to eat more eggs, our merchandising problem is at least half solved.

Concentration on the housewife—seeing to it that she gets a new recipe every month—picturing robust boys and girls as one direct result of using more eggs—repeating the "egg idea" in some form constantly, appetizingly, dramatically — making it easy for the mother in the home to acquire good eggs—such strategy used by an individual concern will boost local egg consumption; adopted by federated groups, the entire egg industry will soon feel a wave of heavier purchasing.

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## *Eggs Second in Use of Storage Plants*

TEN per cent of the total egg production in recent years, equivalent to 10 to 13 million cases yearly, has gone into cold storage, estimates the U. S. Bureau of Agricultural Economics. There are 730 million cubic feet of cold storage space in warehouses and packing plants throughout the country, with eggs second only to apples in the amount of space used. Poultry ranks fourth.

# Government Support of the Egg Market

By J. C. Huttar
Cooperative G. L. F. Exchange, Inc.

*Condensed from a Talk*

AS I have been the Federal Government's New York City agent in making its egg purchase during the last few years, I feel that I am qualified to discuss this form of price supporting to quite an extent.

As I know it, the government's program has taken on two forms. There has been the original program which had for its primary purpose the purchase of eggs as one of the foods for people on relief. I'm speaking of that program which was conducted in December, 1933, and January, 1934. Storage eggs were purchased. When the program began, they were selling for 13½ cents a dozen in New York. At the end they brought 27 cents.

The government's buying first put a floor under the prices of a commodity which threatened to become valueless. Then, since the entire country's program called for purchases of 400,000 cases, a good portion of the total supply, the market was definitely strengthened by this renewed demand. Finally old Jack Frost came along with a few weeks of old-fashioned winter, and there you have the whole story on the price rise.

Sometimes after this, the division of the AAA, which was charged with the responsibility of purchasing surplus commodities, became interested in eggs. The poultry division of the AAA, of which W. D. Termohlen is chief, began working with the Surplus Commodity group on the idea of making some egg purchases for the main purpose of supporting markets and, incidentally, to distribute the eggs to people on relief. The theory or philosophy back of a buying project, as I understand it, has its roots in the same soil as that of the "PEP" supporting programs, namely, that speculative values sometimes get too far below probable economic values. To this is added Secretary Wallace's "Ever-Normal-Granary" plan.

Now here's how it works: "Dewey" Termohlen's poultry division watches the price level of eggs; they pass judgment on the economic value of these eggs, and watch how the speculative value compares with it. They watch the production figures, egg-feed ratio and the probable hatch figures (chick orders), and when they feel that some government support is indicated, they go to the Federal Surplus Commodity Corporation, as it is now called, and advise them to be prepared to buy some eggs. In the meantime, "Dewey" and his men watch the markets and consult with the best dealers in each market. When they feel the time is ripe, they issue instructions as to the kind, quality, and grade of eggs to buy, and how much to pay for them. Everything is ready to go and buying usually starts in all the strategic market points of the country where prices can be most quickly affected.

To sum up this form of market price supporting, I'll just list a few facts and opinions. The opinions are all mine.

Government support stopped undue bearing down of egg prices in all its programs. It eased storers' losses

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when such eggs were purchased. It did, of course, interfere with the regular law of supply and demand. It was designed to do so.

Here's a point I want to make clear. The Government did not go in for raising prices. It never paid more than the day's market price for any eggs. On only a very few occasions did it "buy up" the market price, and then never more than a half cent at a time.

Some of you have probably read the article published a few months ago in "Collier's" weekly entitled, "What Price Applesauce" and written by John Flynn. If the statements about other commodities were as grossly exaggerated and so far from fact as those he made about Government egg buying, then Mr. Flynn and "Collier's" should hide their faces in shame. I don't believe that over ten million dollars has been spent on all the government egg price supporting programs. Further, I don't believe that any federal expenditures have yielded as big a return per dollar as this money.

## *Breeding to Reduce Mortality Losses*

For a 16-year period from 1919 to 1934 the mortality of pullets in the Massachusetts Experiment Station flock of Rhode Island Reds averaged about 26 per cent. No culling was practiced so that a true mortality record was obtained. The generation hatched in 1935 had a mortality in the laying houses for a full year of about 13 per cent. The generation hatched in 1936 had 15 per cent and the losses to date in the 1937 generation are about 60 per cent as great as for 1936 on the same date.

For the past ten years constant attention has been given to the selection of breeding males and females from families with low laying house mortality and for freedom from paralysis. The flocks hatched in 1935, 1936 and 1937 have also been produced by more yearling and older breeding males and females than were previous flocks.

Diagnostic records show that in the last three generations no cases of true paralysis have appeared and that the incidence of tumors and leukemia is very low. These facts suggest that poultrymen should constantly select for low mortality in the laying houses and that families in which paralysis occurs should not be used for breeding.

—F. A. Hays, Massachusetts State College in Featheredfax

## *A Little Psychology in Selling Eggs*

¶ WHEN the Read Drug Company chain of Maryland set out in 1937 to sell more eggs to its fountain trade, clerks who were about to mix milk drinks would ask, "Do you want an egg in it?" This question brought more refusals than acceptances. The approach was then changed. When a customer ordered a milk shake or a malted milk, the clerk would start putting the ingredients into the mixer, then hold up two eggs in his hand and ask, "One or two eggs?" The usual answer was, "One!" This little change in approach more than doubled the sales of eggs for this drug chain.

# Fiber: Useless or Valuable?

By Charles W. Peters

***Condensed from Feedstuffs***

THE demand for a mash containing a low fiber content has no doubt been due to this suspicion that high fiber feeds have been excessively loaded with fillers like ground oat hulls, peanut hulls, screenings, etc., to cheapen the cost. In a great many cases this has actually been true. Still, when such feeds were used, although the rate of growth in young stock was uneven, and the percentage of production in laying hens failed to compete with the results obtained in the lower fiber and better balanced feeds—strange as it seems—cannibalism was not excessively prevalent or troublesome. No one, however, until a few years ago, dreamed that there was or could be any correlation between cannibalism and fiber content of the diet.

Chickens, confined on wire floored pens, are responsible for this new conception of the value of fiber. In using the same ration in a highly unnatural environment as was used on range fed birds, it was soon demonstrated that a dietary deficiency of some form existed. Cannibalism and feather eating soon developed. Efforts to reduce excessive mortality from contagious and infectious diseases were quickly offset by an extremely heavy mortality from this new source. Only the fact that mortality from disease had indeed been materially reduced saved these wire floored pens from being discarded entirely.

### Cannibalism on Low Fiber

The poultry demonstration plant at Pomona, Cal., co-operating with the Agricultural Extension Service of the University of California and the United States Department of Agriculture, in a recent release, has this to say about fiber: "Outbreaks of this vice [cannibalism] appeared among the lots whose rations were low in fiber. . . . There was no mortality due to cannibalism in the two high alfalfa pens. While the records showed an advantage in the use of rations containing 12 per cent alfalfa over rations with 35 per cent bran, in so far as cannibalism is concerned, we doubt whether the same results could be depended upon under average field conditions. Our observations lead us to believe that outbreaks of cannibalism will occur less frequently on rations which contain at least 5 to 6 per cent suitable fiber, such as wheat bran or chopped alfalfa, than rations containing a lower percentage."

Although the result of these findings applies to chicks brooded during a 24-week period, it is reasonable to presume that the same results, in so far as cannibalism and feather eating are concerned, would apply to laying hens. This has, at least, been the observation and experience of poultrymen in this section (southern California) who confine their birds in batteries or wire floored cages.

The commonly accepted practice in feeding birds so confined has been the use of an all-mash ration. However, one poultryman friend of the writer's has long been a firm believer in the use of both mash and grain. When he began several months ago to confine his birds in wire floored pens, he was

The Miller Publishing Co., Minneapolis, Minn.
(Feedstuffs, October 8, 1938)

surprised to find that the birds soon developed an avid appetite for whole barley in the scratch ration. The same birds on range before being placed in the cages, invariably left the barley until all corn and wheat had been consumed. He increased the percentage of barley and soon noted a decrease in cannibalism and feather eating.

### Stepping Up Fiber Content

Thus encouraged, he began experimenting by gradually increasing the fiber content of his mash. The two most economical sources of fiber in this section, aside from barley already mentioned, are chopped alfalfa and wheat bran. Consequently, red flaky bran was substituted for mill run and increased to 25 per cent. The proportion of alfalfa meal was stepped up from the usual 5 per cent to 7½ per cent, then to 10 per cent.

At each increase in fiber percentage, the proportion of whole barley in the scratch ration was decreased. There was no renewal of cannibalism. Then without changing the percentage of alfalfa, a coarser ground hay was used, one that in trade parlance on the coast is called "turkey grind." This has seemed to "do the trick."

The analysis on this mash was approximate 20 per cent protein, 4 per cent fat, 7.5 per cent ash and 6 per cent fiber. A limited amount of scratch grains is fed late in the afternoon. Birds have ready access to grit (important for birds confined in wire floored pens) and oyster shell. Some chopped fresh greens are also given, but not as a regular part of the daily ration. The raw linseed oil is added for two purposes: as a mild laxative and as an aid toward smoother plumage. Its importance, however, in this latter respect has not been definitely established, and may be considered, at this time, of questionable value.

In the production of broilers and friers, the drift during the past year or so has been to the confinement of the birds on screen floored pens to avoid disease contamination and promote more rapid growth. Under such conditions, cannibalism has been extremely troublesome in a great number of cases.

High protein feeds have of course been necessary to promote rapid growth. High protein carriers are as a rule low in fiber content. Not only cannibalism, but feather picking has resulted in many "bare backs," with a resultant loss in No. 2 birds when they were ready for market.

### Feather Picking and Nervousness

Disregarding the fact that many "bare backs" are the result of slow feathering, particularly, an inherited characteristic in some of the heavy breeds, feather picking has also been the cause of much trouble. At first, the condition was thought to be due to a vitamin or mineral deficiency in the ration. But close observation disclosed the fact that the birds were extremely nervous and had a greedy desire for the coarser portions in the mash. Often the finer portions were refused entirely, unless the birds were literally starved into eating them. When more flaky wheat bran and alfalfa were added to the ration, the birds quickly quieted down and were soon back on full feed, apparently satisfied. Cannibalism rapidly diminished under the treatment. Only a few individuals who had formed this vicious habit continued to be troublesome, and the loss stopped completed when they were located and removed.

Many successful feeders who are engaged in the production of Rhode Island Red birds for frier markets raise their birds from start to finish on rations containing 5.5 per cent to 6 per cent fiber.

### More Grit Needed

An interesting fact, often overlooked or neglected in connection with a high fiber feed, is the need for grit, particularly for those birds confined on wire. While it has been demonstrated experimentally that birds can thrive and apparently maintain a satisfactory physical condition without grit on a reasonably well balanced diet, nevertheless it is quite noticeable that as the fiber content of the ration is increased, the increase in the consumption of grit is appreciably greater.

Anatomically, the function of the gizzard is to grind the coarse particles of food into a triturated substance for assimilation in the intestinal tract. This function is aided by the action of grit in the gizzard. The full benefit of the addition of fiber in the ration does not seem to be completely effected when the gizzard is empty of grit. In fact, several cases of gizzard impaction have come under the writer's observation when barley in large amounts had been fed growing chicks which did not have ready access to a sufficient supply of grit. When grit was supplied, the trouble was soon corrected, and the birds soon were back on normal feed.

The two most economical and universally available sources of fiber are flaky red bran and alfalfa meal. Barley and oats are also valuable sources of fiber and their value, in this respect, seems to be interchangeable; cost should be the deciding factor.



## *Smoked Turkey*

Smoked turkey has become a popular delicacy all over this country and undoubtedly will aid considerably in attaining an increase in consumption of our National bird as its use becomes more widespread.

In the smoking process, extra fat birds of about 28 weeks of age are the most desirable; the flesh is firm and mature, but still tender and juicy. The bird is killed, plucked and drawn, using particular care not to break the skin during the dressing operation.

The dressed bird is then placed in a brine made of salt, saltpeter and sugar and pickled for about a week. It is then placed in the smokehouse and smoked with the piquant fumes of burning oak and hickory. Three to five hours smoking are all that is required. The bird is then ready for storage or consumption. In preparation for the table, the bird is roasted in the usual manner.

The resulting meat has a delicious flavor and ranks well with the finest smoked meats of other varieties.

—American Turkey Journal.

## *Egg Within An Egg Once in 130,000 Times*

ACCORDING to the Maine Station, one double-yolked egg appears in about each 531 eggs laid. An egg within an egg must occur much more rarely. In the first nine months of the Storrs test, records seemed to show that an egg within an egg is laid once for about 130,000 eggs collected.

—Storrs Laying Contest Press Bulletin.

# POULTRY STATISTICS

## Hens on Farms—Rate of Lay

**Number of Hens Per Flock, and of Eggs Laid Per Hen and Per Flock, First Day of Month**

| Geographic Division | Layers per flock | | | Eggs per 100 layers | | | Eggs per flock | | |
|---|---|---|---|---|---|---|---|---|---|
| | Jan. 1 | Sept. 1 | Oct. 1 | Sept 1 | Oct. 1 | Aggregate Jan.-Oct. | Sept 1 | Oct. 1 | Aggregate Jan.-Oct. |
| North Atl. | | | | | | | | | |
| 1927-36 (Av.) | 95.8 | 72.9 | 79.1 | 38.2 | 27.6 | 419 | 28.0 | 21.7 | 350 |
| 1937 | 104.1 | 74.4 | 81.3 | 40.9 | 30.9 | 458 | 30.5 | 25.1 | 406 |
| 1938 | 96.7 | 76.9 | 81.4 | 39.0 | 31.3 | 462 | 29.8 | 25.4 | 393 |
| North Cent. | | | | | | | | | |
| 1927-36 (Av.) | 116.4 | 83.7 | 89.8 | 32.3 | 24.3 | 366 | 27.3 | 22.0 | 269 |
| 1937 | 111.4 | 75.2 | 81.0 | 36.7 | 28.5 | 392 | 27.8 | 23.0 | 368 |
| 1938 | 102.4 | 74.9 | 82.1 | 35.9 | 27.4 | 414 | 27.1 | 22.5 | 370 |
| South Atl. | | | | | | | | | |
| 1927-36 (Av.) | 60.5 | 47.7 | 51.2 | 30.1 | 24.2 | 369 | 14.1 | 12.3 | 193 |
| 1937 | 61.4 | 45.0 | 48.8 | 33.8 | 27.1 | 393 | 14.9 | 13.2 | 202 |
| 1938 | 55.8 | 46.3 | 48.9 | 32.2 | 27.6 | 406 | 14.7 | 13.5 | 200 |
| South Cent. | | | | | | | | | |
| 1927-36 (Av.) | 67.6 | 51.8 | 56.9 | 26.8 | 23.2 | 353 | 13.9 | 13.3 | 204 |
| 1937 | 64.7 | 48.3 | 51.4 | 30.4 | 26.9 | 370 | 14.6 | 13.8 | 200 |
| 1938 | 59.3 | 47.0 | 53.9 | 30.3 | 26.3 | 393 | 14.3 | 14.2 | 207 |
| Western | | | | | | | | | |
| 1927-36 (Av.) | 74.1 | 59.6 | 62.0 | 38.3 | 30.0 | 426 | 22.9 | 18.7 | 279 |
| 1937 | 72.2 | 58.3 | 61.1 | 40.9 | 33.9 | 446 | 23.9 | 20.3 | 288 |
| 1938 | 71.1 | 58.3 | 65.6 | 40.8 | 33.1 | 445 | 23.8 | 20.4 | 284 |
| United States | | | | | | | | | |
| 1927-36 (Av.) | 86.5 | 64.6 | 69.7 | 32.2 | 25.0 | 374 | 20.5 | 17.3 | 278 |
| 1937 | 84.2 | 59.9 | 64.3 | 36.1 | 28.8 | 400 | 21.1 | 18.3 | 282 |
| 1938 | 77.6 | 59.8 | 65.6 | 35.3 | 28.2 | 417 | 20.7 | 18.3 | 283 |

Farm flocks are showing the effect of this year's heavy hatchings in a rapid recovery from recent record low numbers of hens. On October 1 the number of layers in the average farm flock was 2 per cent more than a year earlier, in contrast to September 1 numbers which were the same as in September last year and January numbers about 8 per cent less than on January 1, 1937. By areas, the gain on October 1 over last year is most pronounced in the Far West with 7 per cent, and in the South Central with 5 per cent. Present numbers are 5.9 per cent lower than average numbers for the 10 years, 1927-36.

The rapid build-up in size of flocks this year was anticipated as a result of the large spring hatchings. The actual average number of hens and pullets as reported in sample farm flocks belonging to crop reporters was 65.6 this year, compared with 64.3 last year, at the low point of the 14-year record. The 10-year (1927-36) average for October is 69.7.

The average number of eggs laid on October 1 per 100 layers is about 2 per cent less than the record high figures of last year. This was true also on September 1, although earlier months had shown even higher production than last year. The October rate of production per layer still exceeds all years previous to 1937, and is 13 per cent above the 10-year October average.



The North and South Atlantic areas show 1 to 2 per cent more eggs per hundred hens than last year, the East North Central about the same, the South Central and Far Western areas 1 to 2 per cent fewer, and the West North Central area about 6 per cent fewer.

The total production of eggs on October 1 was indicated by average production per farm flock to be the same as on that date last year. The 2 per cent increase in numbers of layers is offset by a corresponding decrease in average number of eggs laid per hen. Small gains in the average egg production per flock, ranging up to 3 per cent are indicated in the North Atlantic, East North Central, South Central, and Far Western areas, and a decrease of 4 per cent in the West North Central area. Because of the continued high rate of production per hen, October 1 total egg production per farm flock this year is almost 6 per cent above the 10-year (1927-36) October average, but about 2 per cent below the previous high October production of eggs in 1926 and in 1931.

—Comment from Poultry and Egg Production Report.

## Egg Prices

**1938 Egg Prices at New York City**

| Kind | October 7 | October 14 | October 21 | October 28 | Oct. 28, 1937 |
|---|---|---|---|---|---|
| | (cents per dozen) | | | | |
| Mixed Color Firsts | 26½ | 27 | 27 | 27½ | 23 |
| Nearby and Midwestern White Premium Marks | 41½-44 | 42½-45 | 38½-41 | 41½-44 | 42 -44 |
| Nearby and Midwestern White Specials | 36 -41 | 36 -42 | 36 -38 | 37 -41 | 35½-41 |
| Pacific Coast Specials | 44 -44¼ | 44 -45 | 41 -42 | 44¾-45 | 41 -42 |
| Nearby and Western Brown Exchange Specials | 36 | 35 | 35 | 37 | 31 -33 |

**Farm Prices of Eggs per Dozen**

| Year | Jan. 15 | Apr. 15 | May 15 | July 15 | Aug. 15 | Sept. 15 | Oct. 15 | Nov. 15 | Dec. 15 |
|---|---|---|---|---|---|---|---|---|---|
| | (Figures given in cents) | | | | | | | | |
| Average 1925-34 | 31.0 | 18.7 | 18.7 | 20.0 | 22.0 | 25.7 | 30.0 | 35.4 | 35.7 |
| 1936 | 22.8 | 16.8 | 18.1 | 20.0 | 22.4 | 24.5 | 27.6 | 32.5 | 30.5 |
| 1937 | 23.1 | 20.1 | 17.9 | 19.4 | 20.4 | 22.9 | 25.2 | 28.0 | 26.0 |
| 1938 | 21.6 | 15.9 | 17.6 | 19.9 | 21.0 | 24.9 | | | |

October egg markets were more or less irregular, although the prevailing tone was steady to firm. During the first half of the month, receipts at the four principal terminal markets were relatively light, and prices tended upward on all classes and grades. This price movement, however, apparently was due more to the immediate supply situation than to increased buying activity, for some resistance to price advances was evident. Later in the month, a pick-up in receipts occurred, and a slight improvement in trading resulted in increased strength. The net change in wholesale prices was a gain averaging about 1 cent on ordinary eggs, and 3 to 4 cents on the better qualities.

—Comment from Monthly Egg and Poultry Markets Review.

## Poultry Meat Prices

**Farm Prices of Chickens per Pound**

| Year | May 15 (Cents) | Sept. 15 (Cents) | Dec. 15 (Cents) |
|---|---|---|---|
| Average 1925-34 | 18.3 | 17.3 | 15.8 |
| 1937 | 14.8 | 17.4 | 16.4 |
| 1938 | 16.1 | 14.3 | |

Live poultry prices held barely steady during October. Eastern markets were spotty at times, and featured by periods of temporary weakness. Early in the month, the Jewish holiday demand gave support, although trade requirements were insufficient to clear available supplies. Prices are considerably lower than a year ago. Receipts of live poultry at New York during October were reported to be slightly heavier than a year earlier. This was apparently due to the heavy arrivals of the opening week, for arrivals since then have not equalled those of last year. Cooler weather has contributed some support.

## Receipts of Eggs and Poultry

**Receipts of Eggs (cases) at 4 Markets***

| Geographic sections | September 1938 | September 1937 | September % change | Jan. to Sept., Inc. 1938 | Jan. to Sept., Inc. 1937 | Jan. to Sept., Inc. % change |
|---|---|---|---|---|---|---|
| New England | 21,557 | 17,035 | +26.55 | 224,308 | 281,091 | −20.20 |
| Middle Atlantic | 93,987 | 102,084 | − 7.93 | 1,328,234 | 1,978,648 | −32.87 |
| South Atlantic | 10,363 | 12,283 | −15.63 | 221,527 | 423,785 | −47.73 |
| East North Central | 111,068 | 119,016 | − 6.68 | 2,276,234 | 3,073,504 | −25.94 |
| West North Central | 330,568 | 340,901 | − 3.03 | 5,874,812 | 4,805,686 | +22.25 |
| South Central | 1,079 | 1,237 | −12.77 | 95,655 | 78,339 | +22.10 |
| Mountain | 23,035 | 43,942 | −47.58 | 369,690 | 411,188 | −10.09 |
| Pacific | 59,368 | 87,761 | −32.35 | 523,590 | 637,955 | −17.93 |
| Miscellaneous | 240 | 222 | + 8.11 | 4,358 | 6,683 | −34.79 |
| TOTAL | 651,265 | 724,481 | −10.11 | 10,918,408 | 11,696,879 | − 6.66 |

**Receipts of Dressed Poultry (pound) at 4 Markets***

| | | | | | | |
|---|---|---|---|---|---|---|
| New England | 849,810 | 285,261 | +197.91 | 9,103,982 | 4,291,435 | +112.14 |
| Middle Atlantic | 3,384,533 | 2,039,893 | + 65.92 | 29,106,868 | 25,744,213 | + 13.06 |
| South Atlantic | 552,765 | 174,356 | +217.03 | 5,281,285 | 2,443,657 | +116.12 |
| East North Central | 3,080,481 | 2,824,871 | + 9.05 | 19,167,161 | 29,399,868 | − 34.81 |
| West North Central | 17,351,664 | 14,826,347 | + 17.03 | 79,434,449 | 84,046,539 | − 5.49 |
| South Central | 688,501 | 1,704,465 | − 59.61 | 16,110,697 | 19,186,917 | − 16.03 |
| Mountain | 258,847 | 291,536 | − 11.21 | 2,026,607 | 2,952,974 | − 31.37 |
| Pacific | 219,258 | 373,383 | − 41.28 | 7,076,426 | 8,656,608 | − 18.26 |
| Miscellaneous | 0 | 0 | − | 0 | 0 | − |
| TOTAL | 26,385,859 | 22,520,112 | +17.17 | 167,307,475 | 176,722,211 | − 5.33 |

* New York, Chicago, Philadelphia, and Boston.

**Receipts of Eggs at Eastern Egg Auctions**

| Week Ending | No. of Plants | Cases Received During Week | % Change from Previous Week | % Change from Last Year |
|---|---|---|---|---|
| October 1 | 27 | 19,820 | +0.41 | + 8.47 |
| October 8 | 27 | 19,480 | −4.62 | + 0.80 |
| October 15 | 24 | 17,129 | −4.15 | − 2.17 |
| October 22 | 23 | 15,725 | +5.18 | + 8.39 |
| October 29 | 25 | 18,480 | +7.54 | +15.64 |



**Receipts of Eggs at Pacific Coast Primary Markets**

| Week Ending | Cases of Eggs 1938 | Cases of Eggs 1937 | Per Cent Change From Last Year |
|---|---|---|---|
| September 24 | 57,672 | 65,480 | −11.92 |
| October 1 | 57,327 | 63,546 | − 9.79 |
| October 8 | 56,039 | 61,061 | − 8.22 |
| October 15 | 51,813 | 58,215 | −11.00 |
| October 22 | 52,678 | 61,974 | −15.00 |

**Receipts of Eggs and Poultry at Central Western Primary Markets**

| Week Ending | Cases of Eggs 1938 | Cases of Eggs 1937 | Cases of Eggs % Chg. | Pounds of Poultry (000 omitted) 1938 | Pounds of Poultry (000 omitted) 1937 | Pounds of Poultry (000 omitted) % Chg. | Pounds of Young Stock (000 omitted) 1938 | Pounds of Young Stock (000 omitted) 1937 | Pounds of Young Stock (000 omitted) % Chg. | Pounds of Fowl (000 omitted) 1938 | Pounds of Fowl (000 omitted) 1937 | Pounds of Fowl (000 omitted) % Chg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sept. 24 | 40,129 | 42,954 | − 6.58 | 5,741 | 5,257 | + 9.21 | 3,997 | 3,146 | +12.71 | 1,662 | 2,028 | −18.05 |
| Oct. 1 | 37,727 | 39,853 | − 5.33 | 5,891 | 5,813 | + 2.90 | 4,112 | 3,542 | +16.10 | 1,780 | 2,186 | −18.55 |
| Oct. 8 | 32,347 | 35,615 | − 9.18 | 5,696 | 6,332 | −10.04 | 3,814 | 3,801 | + 0.34 | 1,802 | 2,434 | −25.98 |
| Oct. 15 | 29,922 | 29,092 | + 2.85 | 5,960 | 6,230 | − 4.33 | 3,990 | 3,767 | + 5.93 | 1,877 | 2,379 | −21.09 |
| Oct. 22 | 25,714 | 20,909 | +22.98 | 6,265 | 6,392 | − 1.99 | 4,133 | 3,708 | +11.44 | 2,042 | 2,568 | −20.49 |

Deliveries of eggs to country packing plants in the Central West and on the Pacific Coast continue to show seasonal declines. Central West plants, however, have reported increases over a year earlier since mid-October, but this reflects the unusually light receipts of a year ago rather than heavy receipts this year. During the early weeks of the year and for a short period in mid-summer 1938, receipts at country plants in the Central West were greater than a year earlier, but except for these periods and the recent changes, receipts at country plants in that area have been lighter this year.

—Comment from Monthly Egg and Poultry Markets Review.

## Egg-Feed Ratio

**New York Egg-Feed Ratio**

| Week Ending | Dozens of Eggs Required to Buy 100 lbs. of Laying Ration 1938 | 1937 | 1936 | Av. Egg Price per Doz. (Dollars) 1938 | 1937 | 1936 | Av. Cost of 100 lbs. Feed (Dollars) 1938 | 1937 | 1936 |
|---|---|---|---|---|---|---|---|---|---|
| September 29 | 4.7 | 6.7 | 6.7 | .334 | .336 | .358 | 1.58 | 2.25 | 2.41 |
| October 6 | 4.4 | 6.2 | 6.7 | .347 | .329 | .357 | 1.54 | 2.11 | 2.38 |
| October 13 | 4.2 | 6.4 | 6.4 | .361 | .318 | .368 | 1.52 | 2.02 | 2.36 |
| October 20 | 4.1 | 5.8 | 6.4 | .366 | .335 | .368 | 1.51 | 1.93 | 2.36 |
| October 27 | 4.4 | 5.3 | 6.4 | .350 | .355 | .368 | 1.55 | 1.90 | 2.35 |

**Chicago Egg-Feed Ratio**

| Week Ending | Dozens of Eggs to Buy 100 lb. of Laying Ration 1938 | 1937 | 10-Yr. Av. 1928-37 | Price of Fresh Graded Firsts (Dollars) 1938 | 1937 | Cost of Ration per 100 lb. (Dollars) 1938 | 1937 |
|---|---|---|---|---|---|---|---|
| September 24 | 4.13 | 7.30 | 5.79 | .245 | .241 | 1.01 | 1.76 |
| October 1 | 4.10 | 7.08 | 5.63 | .245 | .234 | 1.01 | 1.66 |
| October 8 | 3.91 | 6.20 | 5.19 | .245 | .220 | .95 | 1.36 |
| October 15 | 3.71 | 5.81 | 5.10 | .253 | .213 | .939 | 1.24 |
| October 22 | 3.71 | 5.68 | 4.89 | .255 | .221 | .93 | 1.25 |

## Egg Imports

**Imports of Eggs**

| Kind | | September 1938 | September 1937 | Jan. to Sept., Incl. 1938 | Jan. to Sept., Incl. 1937 |
|---|---|---|---|---|---|
| Eggs in Shell | (dozs.) | 20,531 | 32,377 | 162,411 | 436,413 |
| Whole Eggs, Dried | (lbs.) | 5,023 | 27,500 | 133,615 | 447,522 |
| Whole Eggs, Frozen | (lbs.) | 0 | 0 | 938 | 25,412 |
| Yolks, Dried | (lbs.) | 7,600 | 393,750 | 230,155 | 4,449,829 |
| Yolks, Frozen | (lbs.) | 45,120 | 31,470 | 430,220 | 1,239,532 |
| Egg Albumen, Dried | (lbs.) | 85,857 | 297,952 | 467,831 | 2,189,576 |
| Egg Albumen, Frozen | (lbs.) | 0 | 0 | 30 | 0 |

## Egg Exports

**Exports of Eggs**

| Kind | | September 1938 | September 1937 | Jan. to Sept., Incl. 1938 | Jan. to Sept., Incl. 1937 |
|---|---|---|---|---|---|
| Eggs in Shell | (dozs.) | 136,334 | 152,576 | 1,603,938 | 1,575,071 |

## Poultry in Storage

**Storage Holdings of Frozen Poultry**

| Kind | October 1 5-Year Avg. 1933-37 | October 1 1937 | September 1 1938 | October 1 1938 | Per Cent Change Oct. '37-Oct. '38 |
|---|---|---|---|---|---|
| | (Thousand Pounds) | | | | |
| Broilers | 12,964 | 9,079 | 9,060 | 9,802 | + 7.9 |
| Fryers | 4,339 | 4,187 | 2,550 | 4,147 | – 0.95 |
| Roasters | 5,920 | 5,979 | 5,065 | 7,488 | +25.2 |
| Fowls | 11,069 | 11,641 | 8,819 | 9,629 | –17.2 |
| Turkeys | 5,053 | 7,315 | 5,711 | 3,818 | –47.8 |
| Ducks | 5,787 | 9,928 | 11,260 | 11,483 | +15.6 |
| Miscellaneous | 12,663 | 13,592 | 12,476 | 13,583 | – 0.06 |
| Total | 57,795 | 61,721 | 54,941 | 59,950 | – 2.8 |

## Eggs in Storage

**Storage Holdings of Eggs**

| Type | October 1 5-Year Avg. 1933-37 | October 1 1937 | September 1 1938 | October 1 1938 | Per Cent Change Oct. '37-Oct. '38 |
|---|---|---|---|---|---|
| | (Thousands) | | | | |
| Shell Eggs (cases) | 6,699 | 7,058 | 5,942 | 4,766 | –32.4 |
| Frozen Eggs (lbs.) Frozen Case * Equivalent (cases) | 107,332 | 148,216 | 125,018 | 110,190 | –25.6 |
| | 3,067 | 4,235 | 3,572 | 3,148 | –25.6 |
| Total (cases) | 9,766 | 11,293 | 9,514 | 7,914 | –29.9 |

* Frozen eggs are converted on the basis of 35 lbs. to the case.

# *RESULTS OF LAYING TESTS*

THE 1937-38 laying test year became a matter of history on September 22, 1938. Homestead Farm's pen of Rhode Island Reds at Storrs walked off with highest honors among all pens at all tests by laying 3715 eggs, worth 4001 points, during the 51 weeks. Average production per hen was 285.77 eggs and 307.74 points.

### Homestead Reds Take Top Honors

The Homestead birds were almost 100 points ahead of their nearest competitors, Rhode Island Reds belonging to Ralph W. Anderson, and neighbors at the Storrs Test. White Leghorns entered by Dryden Poultry Breeding Farm at the Storrs Test took third highest honors, with E. B. Parmenter's Rhode Island Reds at Storrs seizing fourth place, and Hillview Leghorns at Georgia gaining fifth place.

Outstanding among all individuals for the year was J. J. Warren's Rhode Island Red at Storrs, which smashed her way to a new record for Rhode Island Reds. This bird produced 341 eggs, 369.55 points, topped the former record for her breed by 14 points. Right on her tail was another Rhode Island Red. This bird was entered by W. C. Mullins at Texas, shelled out 341 eggs also, and earned 368.85 points. Another Warren hen at Storrs took third position, with 364 points. E. B. Parmenter took fourth, fifth and sixth places; L. D. Bartholomew, seventh; and W. A. Seidel came through for eighth place, to lead all other light breeds.

The Storrs Test outmaneuvered all other tests during the year, placed 12 pens in the select group of 20 highest for the year at all tests, and 11 hens in the group of 20 highest individuals. Average number of eggs per bird at Storrs was 217.92, average points per bird, 225.84. Rhode Island had the lowest mortality of all tests, with 16.15 per cent.

A glimpse at the table showing high pen for each breed for the year reveals that Homestead Farm led all others in Rhode Island Reds; Dryden Poultry Breeding Farm blazed the way in the Leghorn division; E. N. Larrabee stole the show among New Hampshires; Weber Duck Farm sailed across the finish line well ahead of all other Barred Plymouth Rocks; Townsley Hatcheries took top honors in White Plymouth Rocks after a struggle; and Eriksen's Ancona Yards took the blue ribbon in the Anconas.

### Parmenter Leads in Two Tests

E. B. Parmenter was the only breeder to place pens at the top in more than one test. His Reds topped all other pens at Rhode Island and Pennsylvania.

Final records for the 1937-38 laying test year cannot be compared with those of former years, since the pens include 13 birds during the past year, while pens consisted of 10 birds in former years. Mortality has become of much greater consequence, since a pen becomes handicapped as soon as one of its members passes out of the picture. In former years, the contestant could send along three extra birds, making 13 in all, the three guest birds to be used in case one or more of the others died. Lindstrom Hatchery and Poultry Farm won Poultry Tribune's Livability Trophy for the year.

## High Pen Each Breed
for the Year

(51 Weeks)
Final

| Owner | Breed | Eggs | Points | Test |
|---|---|---|---|---|
| Homestead Farm | R. I. R. | 3715 | 4000.65 | Storrs |
| Dryden Pl. Br. Fm. | Wh. Leg. | 3744 | 3896.40 | Storrs |
| E. N. Larrabee | N. Hamp. | 3434 | 3685.30 | Storrs |
| Weber Duck Farm | Bd. Rk. | 3620 | 3628.85 | Storrs |
| Townsley Hatcheries | Wh. Rk. | 2956 | 3080.05 | Cent. N. Y. |
| Eriksen's Anc. Yds. | Anc. | 3117 | 3022.00 | Storrs |
| V. E. McSweeny | Bl. Aust. | 2764 | 2876.50 | Arizona |
| Lindstrom Pl. Fm. | Wh. Wy. | 2742 | 2848.90 | Georgia |
| T. D. Brown | Wh. Min. | 2416 | 2549.95 | Texas |
| Raymond Murphy | Wh. Gt. | 2271 | 2447.40 | Missouri |
| Hall Bros. Htchy. | Cross | 2134 | 2178.25 | N. Y. State |
| Donald C. Chandler | S. L. W. | 2034 | 2113.00 | Maine |
| Lindstrom Pl. Fm. | Bf. Min. | 1948 | 2098.35 | Missouri |
| Missouri Valley H. | Bf. Leg. | 1870 | 1850.00 | Maine |
| S. E. Raymond | Lamona | 1749 | 1825.40 | Penna. |
| Olen C. Hudson | Col. P. Rk. | 1818 | 1689.90 | Georgia |
| Iowa Master Breeders | Br. L. | 1559 | 1574.70 | Missouri |
| Fairmont's G. N. Hty. | Bf. O. | 1192 | 1203.25 | Okla. |
| Harry L. Day | Ex. Leg. | 1074 | 941.10 | Florida |
| Bestcroft | S. Camp. | 761 | 737.45 | Pass., N. J. |
| Daniel Riker | Bf. Rk. | 686 | 632.35 | Pass., N. J. |

## High Hen Each Breed
for the Year

(51 Weeks)
Final

| Owner | Breed | Eggs | Points | Test |
|---|---|---|---|---|
| J. J. Warren | R. I. R. | 341 | 369.55 | Storrs |
| W. A. Seidel | Wh. Leg. | 336 | 358.10 | Storrs |
| Weber Duck Farm | Bd. Rk. | 320 | 349.10 | Storrs |
| E. N. Larrabee | N. Hamp. | 314 | 344.65 | Storrs |
| Algwyn Acres | Wh. Rk. | 317 | 325.50 | Cent. N. Y. |
| T. D. Brown | Wh. Min. | 304 | 321.30 | Texas |
| Schwegler's Htchy. | Wh. Wy. | 285 | 304.45 | Storrs |
| Lonnie Van Sant | Bl. Aust. | 266 | 287.90 | Arizona |
| Eriksen's Anc. Yds. | Anc. | 305 | 278.15 | Storrs |
| Hillview Pl. Fm. | Wh. Gt. | 282 | 278.00 | Maine |
| Hall Bros. Htchy. | Cross | 262 | 260.00 | N. Y. State |
| Donald C. Chandler | S. L. W. | 215 | 234.00 | Maine |
| Lindstrom Pl. Fm. | Bf. Min. | 219 | 232.90 | Missouri |
| Olen C. Hudson | Col. P. Rk. | 255 | 231.70 | Georgia |
| S. E. Raymond | Lamona | 222 | 231.35 | Penna. |
| W. W. Lehman | Bf. Leg. | 214 | 227.35 | Penna. |
| Harry L. Day | Ex. Leg. | 211 | 203.40 | Florida |
| Iowa Master Breeders | Br. Leg. | 178 | 190.30 | Missouri |
| Fairmont's G. N. Hty. | Bf. O. | 185 | 181.35 | Okla. |
| Daniel Riker | Bf. Rk. | 159 | 156.85 | Pass., N. J. |
| Bestcroft | S. Camp. | 168 | 156.65 | Pass., N. J. |

## High Pen Each Test
for the Year

(51 Weeks)
Final

| Owner | Breed | Eggs | Points | Test |
|---|---|---|---|---|
| Homestead Farm | R. I. R. | 3715 | 4000.65 | Storrs |
| Hillview Pl. Farm | Wh. Leg. | 3729 | 3781.90 | Georgia |
| E. B. Parmenter | R. I. R. | 3475 | 3725.05 | Rhode Island |
| Erath Egg Farm | Wh. Leg. | 3458 | 3660.25 | Texas |
| Rochelle Hatchery | Wh. Leg. | 3536 | 3653.10 | Michigan |
| S. J. Drellishak | Wh. Leg. | 3394 | 3623.10 | Hunt. N. J. |
| Dembro Pl. Farm | Wh. Leg. | 3398 | 3607.10 | Pass., N. J. |
| P. S. Dickey | Wh. Leg. | 3399 | 3546.45 | Arizona |
| Booth Pl. Farm | Wh. Leg. | 3416 | 3533.80 | Florida |
| Hobart Pl. Farm | Wh. Leg. | 3350 | 3524.55 | Cent. N. Y. |
| Dryden Pl. Br. Fm. | Wh. Leg. | 3373 | 3495.45 | West. N. Y. |
| E. N. Swartzel | Wh. Leg. | 3316 | 3422.95 | Missouri |
| Rufus W. Lathrop | R. I. R. | 3128 | 3330.00 | Maine |
| Harry A. Schnell | Wh. Leg. | 3308 | 3289.05 | N. Y. State |
| E. B. Parmenter | R. I. R. | 3145 | 3251.15 | Penna. |
| Oklahoma City Hty. | Wh. Leg. | 3108 | 3187.20 | Oklahoma |



## High Hen Each Test
for the Year

(51 Weeks)
Final

| Owner | Breed | Eggs | Points | Test |
|---|---|---|---|---|
| J. J. Warren | R. I. R. | 341 | 369.55 | Storrs |
| W. C. Mullins | R. I. R. | 341 | 368.85 | Texas |
| E. B. Parmenter | R. I. R. | 338 | 362.15 | Rhode Island |
| Guy A. Leader | Wh. Leg. | 325 | 353.65 | Penna. |
| W. A. Seidel | Wh. Leg. | 322 | 352.20 | Georgia |
| Hobart Pl. Farm | Wh. Leg. | 330 | 348.00 | Cent. N. Y. |
| Creighton Bros. | Wh. Leg. | 319 | 347.45 | Pass., N. J. |
| J. A. Hanson | Wh. Leg. | 314 | 337.60 | West. N. Y. |
| Foreman Pl. Farm | Wh. Leg. | 305 | 331.55 | Michigan |
| Foreman Pl. Farm | Wh. Leg. | 311 | 330.65 | Florida |
| J. J. Warren | R. I. R. | 323 | 328.00 | Maine |
| Del Rio Farm | Wh. Leg. | 306 | 326.55 | Arizona |
| Lux Leghorn Land | Wh. Leg. | 308 | 325.00 | Missouri |
| Pearl Poultry Farm | Wh. Leg. | 293 | 320.20 | Hunt. N. J. |
| Oklahoma City Hty. | Wh. Leg. | 308 | 317.80 | Oklahoma |
| Redbird Farm | R. I. R. | 300 | 311.55 | N. Y. State |

## Twenty Highest Pens All Breeds
for the Year

(51 Weeks)
Final

| Owner | Breed | Eggs | Points | Test |
|---|---|---|---|---|
| Homestead Farm | R. I. R. | 3715 | 4000.65 | Storrs |
| R. W. Anderson | R. I. R. | 3672 | 3907.90 | Storrs |
| Dryden Pl. Br. Fm. | Wh. Leg. | 3744 | 3896.40 | Storrs |
| E. B. Parmenter | R. I. R. | 3547 | 3795.50 | Storrs |
| Hillview Pl. Farm | Wh. Leg. | 3729 | 3781.90 | Georgia |
| W. F. Herr | R. I. R. | 3554 | 3755.15 | Storrs |
| E. B. Parmenter | R. I. R. | 3475 | 3725.05 | Rhode Island |
| L. D. Bartholomew | R. I. R. | 3481 | 3695.40 | Storrs |
| E. N. Larrabee | N. Hamp. | 3434 | 3685.30 | Storrs |
| Erath Egg Farm | Wh. Leg. | 3458 | 3660.25 | Texas |
| Rochelle Hatchery | Wh. Leg. | 3536 | 3653.10 | Michigan |
| Guy A. Leader | Wh. Leg. | 3435 | 3630.75 | Storrs |
| Weber Duck Farm | Bd. Rks. | 3620 | 3628.85 | Storrs |
| S. J. Drellishak | Wh. Leg. | 3394 | 3623.10 | Hunt. N. J. |
| J. J. Warren | R. I. R. | 3366 | 3623.00 | Storrs |
| Dembro Pl. Farm | Wh. Leg. | 3398 | 3607.10 | Pass., N. J. |
| Erath Egg Farm | Wh. Leg. | 3412 | 3594.35 | Texas |
| Wm. L. Mehrmann, Jr. | W. Leg. | 3498 | 3581.80 | Storrs |
| Geo. B. Treadwell | R. I. R. | 3405 | 3571.00 | Storrs |
| J. A. Hanson | Wh. Leg. | 3442 | 3567.90 | Pass., N. J. |

## Twenty Highest Hens All Breeds
for the Year

(51 Weeks)
Final

| Owner | Breed | Eggs | Points | Test |
|---|---|---|---|---|
| J. J. Warren | R. I. R. | 341 | 369.55 | Storrs |
| W. C. Mullins | R. I. R. | 341 | 368.85 | Texas |
| J. J. Warren | R. I. R. | 338 | 364.00 | Storrs |
| E. B. Parmenter | R. I. R. | 338 | 362.15 | Rhode Island |
| E. B. Parmenter | R. I. R. | 332 | 362.00 | Storrs |
| E. B. Parmenter | R. I. R. | 336 | 361.00 | Storrs |
| L. D. Bartholomew | R. I. R. | 328 | 359.00 | Storrs |
| W. A. Seidel | Wh. Leg. | 336 | 358.10 | Storrs |
| R. W. Anderson | R. I. R. | 330 | 358.00 | Storrs |
| Foreman Pl. Farm | Wh. Leg. | 328 | 356.95 | Texas |
| Erath Egg Farm | Wh. Leg. | 336 | 355.25 | Texas |
| Guy A. Leader | Wh. Leg. | 325 | 353.65 | Penna. |
| W. A. Seidel | Wh. Leg. | 322 | 352.25 | Georgia |
| Weber Duck Farm | Bd. Rk. | 320 | 349.10 | Storrs |
| Hobart Pl. Farm | Wh. Leg. | 330 | 348.00 | Cent. N. Y. |
| W. A. Seidel | Wh. Leg. | 325 | 348.00 | Storrs |
| Creighton Bros. | Wh. Leg. | 319 | 347.45 | Pass., N. J. |
| Weber Duck Farm | Bd. Rk. | 326 | 347.05 | Rhode Island |
| R. W. Anderson | R. I. R. | 322 | 346.00 | Storrs |
| J. J. Warren | R. I. R. | 318 | 346.00 | Storrs |

## White Leghorns

20 Highest Pens

(51 Weeks)
Final

| Owner | Eggs | Points | Test |
|---|---|---|---|
| Dryden Pl. Br. Farm | 3744 | 3896.40 | Storrs |
| Hillview Poultry Farm | 3729 | 3781.90 | Georgia |
| Erath Egg Farm | 3458 | 3660.25 | Texas |
| Rochelle Hatchery | 3536 | 3653.10 | Michigan |
| Guy A. Leader | 3435 | 3630.75 | Storrs |
| S. J. Drellishak | 3394 | 3623.10 | Hunt. N. J. |
| Dembro Poultry Farm | 3398 | 3607.10 | Pass., N. J. |
| Erath Egg Farm | 3412 | 3594.35 | Texas |
| Wm. L. Mehrmann, Jr. | 3498 | 3581.80 | Storrs |
| J. A. Hanson | 3442 | 3567.90 | Pass., N. J. |
| Booth Poultry Farms | 3343 | 3560.50 | Georgia |
| P. S. Dickey | 3399 | 3546.45 | Arizona |
| Booth Poultry Farms | 3416 | 3533.80 | Florida |
| Tarleton Poultry Farm | 3281 | 3526.85 | Texas |
| Hobart Poultry Farm | 3350 | 3524.55 | Cent. N. Y. |
| Foreman Poultry Farm | 3401 | 3496.60 | Storrs |
| Dryden Pl. Br. Farm | 3373 | 3495.45 | West. N. Y. |
| Ravenwood Poultry Farm | 3372 | 3485.55 | Florida |
| Kauder's Ped. Leghorns | 3302 | 3477.10 | Cent. N. Y. |
| Hillview Poultry Farm | 3296 | 3475.70 | Storrs |

## Rhode Island Reds

20 Highest Pens

(51 Weeks)
Final

| Owner | Eggs | Points | Test |
|---|---|---|---|
| Homestead Farm | 3715 | 4000.65 | Storrs |
| R. W. Anderson | 3672 | 3907.90 | Storrs |
| E. B. Parmenter | 3547 | 3795.50 | Storrs |
| W. F. Herr | 3554 | 3755.15 | Storrs |
| E. B. Parmenter | 3475 | 3725.05 | Rhode Island |
| L. D. Bartholomew | 3481 | 3695.40 | Storrs |
| J. J. Warren | 3366 | 3623.00 | Storrs |
| Geo. B. Treadwell | 3405 | 3571.00 | Storrs |
| W. C. Mullins | 3315 | 3545.30 | Texas |
| R. E. & F. H. Kendrick | 3260 | 3497.95 | Rhode Island |
| Weber Duck Farm | 3313 | 3454.65 | Rhode Island |
| Wene Chick Farms | 3333 | 3452.00 | Storrs |
| Walter S. Haven | 3204 | 3411.00 | Storrs |
| Roberts Poultry Farm | 3123 | 3370.00 | Storrs |
| J. J. Warren | 3201 | 3369.10 | West. N. Y. |
| P. J. Osborne | 3155 | 3354.60 | Michigan |
| Donald S. Crooks | 3171 | 3349.00 | Storrs |
| J. E. Humes | 3215 | 3346.10 | Georgia |
| Rufus W. Lathrop | 3128 | 3330.00 | Maine |
| W. C. Mullins | 3134 | 3318.75 | Texas |

## New Hampshires

20 Highest Pens

(51 Weeks)
Final

| Owner | Eggs | Points | Test |
|---|---|---|---|
| E. N. Larrabee | 3434 | 3685.30 | Storrs |
| James H. Horne | 3273 | 3485.05 | Storrs |
| Eben Wood | 3172 | 3288.65 | Pass., N. J. |
| Hubbard Farms | 3066 | 3267.70 | Storrs |
| E. N. Larrabee | 3053 | 3251.85 | West. N. Y. |
| Steelman Pl. Farms | 3136 | 3246.70 | Storrs |
| Lamar W. Sexton | 3092 | 3192.60 | Pass., N. J. |
| A. J. Williams | 3098 | 3190.45 | Florida |
| W. W. Boulware | 2998 | 3157.20 | Georgia |
| A. J. Williams | 3113 | 3137.90 | Georgia |
| H. S. & M. E. Twichell | 2955 | 3124.00 | West. N. Y. |
| Hank's Hennery | 2922 | 3095.90 | West. N. Y. |
| Schwegler's Hatchery | 2938 | 3079.20 | West. N. Y. |
| Fuzzydele Farms | 2864 | 2963.15 | Penna. |
| Hubbard Farms | 2799 | 2929.90 | West. N. Y. |
| Eben Wood | 2843 | 2918.00 | Maine |
| Eben Wood | 2756 | 2877.65 | N. Y. State |
| James H. Horne | 2698 | 2778.00 | Maine |
| Wene Chick Farms | 2544 | 2743.75 | Storrs |
| Quimby School | 2705 | 2729.00 | Maine |



## Barred Plymouth Rocks

20 Highest Pens

(51 Weeks)
Final

| Owner | Eggs | Points | Test |
|---|---|---|---|
| Weber Duck Farm | 3620 | 3628.85 | Storrs |
| Dryden Pl. Br. Farm | 3385 | 3452.35 | Storrs |
| William L. Weiss | 3307 | 3353.40 | Cent. N. Y. |
| Weber Duck Farm | 3252 | 3340.70 | Cent. N. Y. |
| Oakland Farm | 3306 | 3330.35 | Storrs |
| Oakland Farm | 3134 | 3293.30 | Rhode Island |
| Broad Acres Farm | 2949 | 3172.70 | Storrs |
| Egyptian Hatchery | 3082 | 3072.10 | Missouri |
| Dryden Pl. Br. Farm | 3002 | 3062.75 | Missouri |
| Paul G. Riley | 2984 | 3047.35 | Cent. N. Y. |
| David T. Cohen | 2908 | 3028.00 | Storrs |
| Weber Duck Farm | 2895 | 3023.00 | Maine |
| Charles Lathrop | 2901 | 3014.25 | Hunt. N. J. |
| Stuart W. Smith | 2848 | 2935.25 | Cent. N. Y. |
| Viall Stanley & Son | 2759 | 2932.60 | Rhode Island |
| David T. Cohen | 2743 | 2873.05 | Rhode Island |
| Frank Teasdale | 2840 | 2854.40 | Cent. N. Y. |
| Paul G. Riley | 2822 | 2853.90 | Georgia |
| Fellows Brothers | 2782 | 2817.00 | Storrs |
| Lindstrom Poultry Farm | 2697 | 2810.65 | Missouri |

## White Plymouth Rocks

20 Highest Pens

(51 Weeks)
Final

| Owner | Eggs | Points | Test |
|---|---|---|---|
| Townsley Hatcheries | 2956 | 3080.05 | Cent. N. Y. |
| Homestead Farm | 2944 | 3046.40 | Storrs |
| John Spangenburg | 2936 | 3037.25 | Storrs |
| Earl C. Dunham | 2786 | 2908.95 | Cent. N. Y. |
| Philip S. Davis | 2829 | 2868.90 | Storrs |
| Overbrook Farm | 2886 | 2855.20 | Georgia |
| Paul G. Riley | 2955 | 2829.50 | Georgia |
| Philip S. Davis | 2770 | 2820.55 | Cent. N. Y. |
| E. A. Hirt | 2665 | 2793.60 | Storrs |
| Albert C. Lawton | 2650 | 2763.00 | Maine |
| Foster Jameson | 2725 | 2721.00 | Maine |
| Roscoe Hill's Hatchery | 2538 | 2713.70 | Georgia |
| Four Winds Farm | 2608 | 2701.60 | Storrs |
| Overbrook Farm | 2675 | 2672.50 | Georgia |
| E. A. Hirt | 2505 | 2645.75 | Rhode Island |
| Schwegler's Hatchery | 2587 | 2619.35 | Cent. N. Y. |
| Allegany Co. 4-H Assn. | 2530 | 2613.95 | Cent. N. Y. |
| Riley Poultry Farm | 2655 | 2612.25 | Michigan |
| Pay Streak Hatchery | 2558 | 2609.85 | Florida |

## Average Production in Each Test for the Year

(51 Weeks)
Final

| Test | No. Birds | Eggs Per Bird | Points Per Bird | Per Cent Mortality For Sept. | Per Cent Mortality For Year |
|---|---|---|---|---|---|
| Storrs | 1,300 | 217.92 | 225.84 | 1.15 | 18.23 |
| Texas | 650 | 204.68 | 214.34 | 2.61 | 18.46 |
| West. N. Y. | 884 | 204.38 | 209.76 | 1.47 | 16.62 |
| Cent. N. Y. | 910 | 202.17 | 207.11 | 1.97 | 20.54 |
| Rhode Island | 650 | 194.62 | 204.77 | 2.00 | 16.15 |
| Arizona | 260 | 195.80 | 201.72 | .76 | 21.92 |
| Georgia | 1,222 | 198.35 | 201.35 | 2.86 | 22.34 |
| Passaic, N. J. | 1,105 | 191.80 | 195.19 | 2.44 | 23.16 |
| Hunt., N. J. | 637 | 183.61 | 189.50 | 1.72 | 23.86 |
| Michigan | 845 | 180.90 | 187.40 | 1.65 | 23.78 |
| Missouri | 780 | 174.46 | 183.87 | 3.97 | 23.97 |
| Florida | 1,274 | 181.01 | 180.83 | 1.33 | 23.07 |
| Oklahoma | 624 | 175.67 | 179.80 | 4.32 | 24.67 |
| Maine | 1,027 | 169.40 | 173.40 | 2.48 | 23.80 |
| Pennsylvania | 1,222 | 167.91 | 170.66 | 1.06 | 33.55 |
| N. Y. State | 1,079 | 152.86 | 151.47 | 1.48 | 31.69 |

# POULTRY HOUSE CHATTER

"Melvin! . . . Melvin!!"
"What?"
"Are you spitting on my baby chicks?"
"Naw, but I'm coming pretty close."
—Oral Hygiene.

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Waitress—"Don't you like your college pudding, sir?"
Diner—"I'm afraid not. There seems to be an egg in it that ought to have been expelled."—Pathfinder

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Son—"Dad, I don't believe I can work in the chickenhouse today. I don't feel well!
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Judge—"What prompted you to rob this hatcheryman's till?"
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"Not'tall. The reason was, he was that scared at the judges, he didn't let all his weight down."

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"Whatcha doin', Mandy?"
"Buryin' mah rooster, niggah."
"Sho 'nough? Am he daid?"
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"How did you make your neighbor keep his hens in his own yard?"
"One night I hid a half dozen eggs under a bush in my garden, and next day I let him see me gather them. I wasn't bothered after that." — The Eggsaminer

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"Indians," declares a Philadelphian, "never forget." Meeting a Sioux, the Philadelphian asked if he liked eggs.
"Yes," said the Sioux.
Twenty years later, greeting the same Indian, the Philadelphian said "How?"
"Fried," grunted the Sioux.
—Philadelphia Inquirer

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*(Continued from Inside Front Cover)*

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Everybódys Poultry Magazine Pub. Co., Inc.
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Typed cards

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INTENTIONAL 2ND EXPOSURE

# *Egg Advertising Slogans*

***A few of the prize slogans submitted in the $3,000 Egg Advertising Contest conducted by Everybodys Poultry Magazine last season.***

Travel health's happy highway—eat eggs often.
For health's sake, eat more eggs.
Eat more eggs! A perfect food securely sealed.
Fresh eggs—better health for every food dollar.
Eggs! For child growth and adult good health.
Eggs—The certified ration of the Nation.
Start the day the healthful way—eat eggs!
Eggs—the perfect food for perfect health.
Eat eggs. Abundant nourishment sealed within each shell.
Eggs build health.
Eat eggs daily for health and economy.
The perfect food in a sealed package.
The perfect food, delivered in nature's own package.
Eat more eggs! Nature's keynote to health.
The road to health—an egg a day.
For your health's sake—eat more eggs.
For better health—eat more eggs.
Eat more eggs and enjoy health.
Help yourself to perfect, natural, economical food.
Be thrifty and healthy. Eat eggs.
Treat your family to fresh eggs daily.
Eat more eggs—Nature's own health food.
For health and happiness, eat more eggs.
Use more eggs for health and economy.
Eggs—Nature's balanced food—sold everywhere.
Use eggs for family health and economy.
Eggs. Nature's health food. Serve them often.
Health is wealth. Guard it by eating eggs.
Buy health by the dozen. Eat more eggs.
A dozen reasons for better health.
Eggs—the perfect food in the perfect package.
Eggs—Nature's finest food. Eat them daily.
A carton of eggs. A carton of health.
Eat more eggs—Nature's own health food.
Balance your budget with an approved food.
Be wise! Eggs will keep your family healthy.

# END OF NUMBER

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